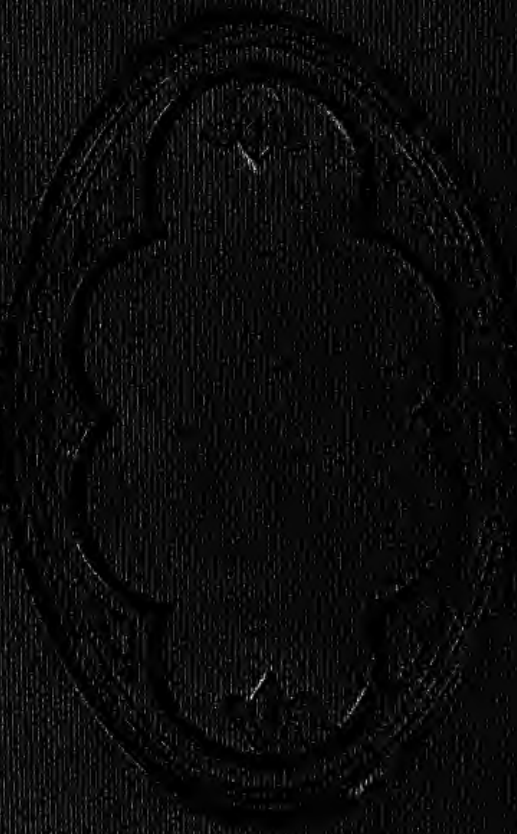


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COMMONWEALTH OF MASSACHUSETTS.  
BUREAU OF STATISTICS OF LABOR.  
ROOMS 250-258, STATE HOUSE, BOSTON.



CHAS. F. PIDGIN, CHIEF.

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FRANK H. DROWN, FIRST CLERK.

*With the  
Compliments of the Chief.*



THE  
ANNUAL STATISTICS  
OF  
MANUFACTURES.  
  
1902.

SEVENTEENTH REPORT.



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1903.

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1902

APPROVED BY  
THE STATE BOARD OF PUBLICATION.



# Commonwealth of Massachusetts.

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BUREAU OF STATISTICS OF LABOR,  
ROOMS 250-258, STATE HOUSE,  
BOSTON, JULY 8, 1903.

TO THE HONORABLE SENATE AND HOUSE OF REPRESENTATIVES:

I have the honor to transmit, herewith, the Annual Statistics of Manufactures for the year 1902, which have been collected and are presented in conformity with the provisions of Chapter 107 of the Revised Laws.

The volume comprises two parts. Part I contains the Industrial Chronology of the Commonwealth for the year ending September 30, 1902. Part II presents comparative statistics of our manufacturing industries for the years 1901 and 1902, covering the following subjects: Establishments and their management; investment, materials used, and product; labor and its compensation; working time and proportion of business done; general summary of industrial conditions; and condensed general statements regarding the years 1901 and 1902.

Since the passage of the law requiring annual statistics of manufactures, the collection of schedules, the correspondence connected therewith, and the tabulation of the returns have been under the general direction of Mr. Frank H. Drown, formerly Second Clerk, but now First Clerk of the Bureau, to whom my thanks are due for his careful supervision of the executive work of the Department. During this time Miss Margaret Shea has been his assistant and, upon his promotion, his former duties devolved upon her. With long experience and a thorough knowledge of the details of the work, she has rendered the most efficient and satisfactory service and it is a duty as well as a pleasure to commend her.

Very respectfully,

CHARLES F. PIDGIN,

*Chief.*



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PART I.

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INDUSTRIAL CHRONOLOGY

FOR THE

YEAR ENDING SEPTEMBER 30, 1902.

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## PART I.

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# INDUSTRIAL CHRONOLOGY

FOR THE

YEAR ENDING SEPTEMBER 30, 1902.

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As in past years, the following Chronology has been prepared from information supplied by manufacturers, and from other sources. While not including all events happening during the year it includes the more important ones affecting the conduct of the industrial enterprises of the Commonwealth.

For convenience of reference, the presentation of the industrial facts has been condensed into three tables, the first covering the establishment of new firms and corporations, new industries, and changes from private firms to corporations; the second to changes in the names of firms, corporations, location of plants, etc.; and the third to the construction of new buildings, the addition of new machinery, new classes of product, etc. The following presentation covers the returns of

### **New Establishments, Firms, Corporations, Industries, etc.**

In this table is recorded each instance reported to this Department of the formation of new firms, new corporations, new industries, etc., together with recorded instances of changes made from private firms to corporations and the reorganization of existing corporations. The method of reading this table is as follows: In the town of Adams during the month of October, 1901, a new firm under the name of the North Adams Spool & Bobbin Co. was established. In the town of Amherst, during the month of April, 1902, the New England Pocketbook &

Novelty Co. was organized under the laws of New Jersey with an authorized capital of \$65,000. Other lines may be read in a similar manner.

Certain of the names given on the following pages are preceded by an asterisk (\*) or dagger (†). The former indicates a change from a private firm to a corporation and the latter indicates the reorganization of a corporation already in existence. In the case of corporations, the name of the State under the laws of which it is incorporated follows the name of the organization, and is in turn followed by the amount of capital stock authorized by its charter.

*New Establishments, Firms, Corporations, Industries, etc.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, GOODS MADE. STATE IN WHICH INCORPORATED, AND AUTHORIZED CAPITAL.
<b>Adams</b> (Oct) . .	North Adams Spool & Bobbin Co.
<b>Agawam</b> (Dec) . .	†Golden Spring Hook & Eye Co., Mass., \$15,000.
<b>Amesbury</b> (Mar) . .	Fox, Fenerhern, & Mentz Leather Co., Mass., \$12,500.
<b>Amherst</b> (Apr) . .	New England Pocketbook & Novelty Co., N. J., \$65,000.
(May) . .	Angus & Seitz, boxes.
<b>Andover</b> (May) . .	American Degreasing Co., wool scouring.
<b>Athol</b> (May) . .	Oliver & Whitney Co., machine screws, etc.
<b>Attleborough</b> (Nov) . .	Chapman & Borden, jewelry.
(Aug) . .	Chas. E. Orr, shoe strings.
	E. A. Fargo Co., jewelry, R. I., \$30,000.
<b>Auburn</b> (Mar) . .	Hogg Carpet Co., Mass., \$15,000.
<b>Beverly</b> (Apr) . .	F. W. Stuart & Co., lasts.
(Jul) . .	Woodbury Shoe Co., Maine, \$50,000.
<b>Boston</b> (Oct) . .	Boston Lacing Hook Co., Mass., \$10,000.
	Fred. J. Quinby & Co., bookbinding, Mass., \$50,000.
	Idea Press, printing and publishing, Mass., \$5,000.
	Keller, Maxwell, & Flynn, gloves.
	Prince, Collins, & Co., boots and shoes.
	*Wilson Jewelry Co., jewelry, Mass., \$25,000.
(Nov) . .	W. H. McElwain & Co., soles.
	Bailey Printing Co., printing and publishing, Mass., \$20,000.
(Dec) . .	*Geo. H. Ellis Co., printing and publishing, Mass., \$75,000.
	*Hodge Boiler Works, Mass., \$100,000.
	Mrs. A. M. Townsend, Inc., drugs, Mass., \$10,000.
	National Coated Paper Co., Mass., \$10,000.
	*Waitt & Bond, Inc., cigars, Maine, \$500,000.
(Mar) . .	American Machine Manufacturing Co., Mass., \$5,000.
	Flagg Shoe Machinery Co., Maine, \$10,000,000.
	*Hathaway Bookbinding Co., Mass., \$5,000.
	†United Injector Co., N. Y., \$500,000.
(May) . .	Metallochord Co., musical instruments, Mass., \$5,000.
	Cream-ette Pure Food Co., Maine, \$100,000.
(Jun) . .	*Boston Mirror Co., Mass., \$10,000.
	*F. P. Norton Cigar Co., Mass., \$40,000.
	†United Button Co., Del., \$3,000,000.
(Jul) . .	†C. C. A. Cigar Co., Mass., \$50,000.
	Union Co-operative Cigar Association, Mass., \$1,100.

*New Establishments, Firms, Corporations, Industries, etc. — Continued.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, GOODS MADE, STATE IN WHICH INCORPORATED, AND AUTHORIZED CAPITAL.
<b>Boston</b> (Aug) .	*Griffith-Stillings Press, printing and publishing, Mass., \$80,000. *W. F. Smith Co., drugs, chemicals, etc., Maine, \$500,000.
(Sep) .	Sumner M'f'g Co., bakers' machinery, Mass., \$50,000.
<b>Braintree</b> (Dec) .	*Stevens & Willis Co., tacks, nails, etc., Mass., \$45,000.
(Jan) .	*Williams-Kneeland Co., shoes, Mass., \$75,000.
<b>Brockton</b> (Nov) .	United States Die Co., cutting dies, etc.
(Dec) .	*Field Bros. & Gross Co., shoes, Mass., \$15,000. Geo. F. Bryant & Co., shoe stays, etc. Plymouth Rand Co., shoe rands, etc.
(Jan) .	Briggs & Brock Bros., <sup>A</sup> shoe blacking. Brockton Webbing Co., shoe strapping, etc., Mass., \$10,000. Chas. A. Snow Co., confectionery, Mass., \$5,000.
(Feb) .	Edward Sheehy, slippers. Standard Box Toe Co., box toes, etc.
(Mar) .	C. S. Marshall & Co., boots and shoes.
(May) .	Alden Sheet Metal & Plumbing Co., Mass., \$5,000.
(Jun) .	†Geo. E. Keith Co., shoes, Maine, \$2,000,000. Perkins Shoe Co., boots and shoes.
(Aug) .	Flint-Hazzard Co., shoes, Mass., \$15,000.
(Sep) .	Kelly-Evans Co., shoes, Mass., \$15,000. Perley E. Barbour, box toes, etc. †W. L. Douglas Shoe Co., Maine, \$2,000,000.
<b>Brookfield</b> (Oct) .	Moreau Bros., shoe counters.
<b>Cambridge</b> (Nov) .	†John P. Squire Co., pork and pork products, N. J., \$7,500,000.
(Apr) .	Dover Stamping Co., tinware.
(May) .	Doten-Dunton Desk Co., Maine, \$35,000. *Eastern Clay Goods Co., pottery, Mass., \$25,000.
<b>Canton</b> (Apr) .	Alpha Gas Machine Co.
<b>Charlton</b> (Nov) .	Geo. A. Phillips, shoddy.
<b>Chelsea</b> (Apr) .	Maine Furniture Co.
(Jun) .	Chickering & Babigian, shoes.
<b>Cheshire</b> (Mar) .	*Farnum Cheshire Lime & Cement Co., N. Y., \$350,000.
<b>Chicopee</b> (Jun) .	Chicopee Falls Paper Co., paper boxes. J. T. Ashworth, mercerized cotton.
<b>Clinton</b> (Jun) .	Belle Vue Mills, worsteds, Mass., \$15,000.
<b>Conway</b> (May) .	Mann & Sprague, duck trousers, etc.
<b>Dalton</b> (Feb) .	John P. Crane, bath towels, rugs, etc.
<b>Danvers</b> (Oct) .	Creese & Cook Co., leather, Mass., \$25,000.
(Nov) .	*Sylvester Co., <sup>B</sup> spikes, bar iron, etc., Mass., \$50,000.
(May) .	Royal Cereal Co., bread crumbs.
(Jul) .	Fuller M'f'g Co., hoes, weeders, etc., Maine, \$100,000.
<b>Dracut</b> (Mar) .	Whitman & Co., fertilizers.
<b>Dudley</b> (Jun) .	Merritt Woollen Co., worsteds, N. J., \$50,000.
<b>E. Bridgewater</b> (Mar) .	*The Old Colony Foundry Co., Mass., \$12,000.
<b>Egremont</b> (Sep) .	Bliss M'f'g Co., blacksmiths' and farmers' tools, etc., Mass., \$5,000.
<b>Erving</b> (Aug) .	Millers Falls Paper Co., Mass., \$150,000.
<b>Fall River</b> (Nov) .	*Arctic Ice & Cold Storage Co., Mass., \$300,000.
(Feb) .	Davis Mills, cottons, Mass., \$500,000.
(May) .	Thos. J. Creighton & Co., brass work.
(Jun) .	Thos. Redfern & Son, machinists' work.

<sup>A</sup> Later retired from business.<sup>B</sup> Includes plant operated under same name in Somerville.

*New Establishments, Firms, Corporations, Industries, etc.* — Continued.

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, GOODS MADE, STATE IN WHICH INCORPORATED, AND AUTHORIZED CAPITAL.
<b>Fitchburg</b> (Oct)	. †Sawyer Tool M'fg Co., Mass., \$35,000.
(Jul)	. Cornforth & Marx, silk yarn, etc.
(Sep)	. Fitchburg Broom & Brush Co., Maine, \$50,000.
<b>Framingham</b> (Nov)	. Columbia Hat Co., straw and felt hats.
<b>Franklin</b> (Jul)	. Franklin Yarn Co., Maine, \$10,000. H. J. Phelps, springs and rivets.
<b>Gardner</b> (Jul)	. *John A. Dunn Co., chairs, Maine, \$250,000.
(Sep)	. John Dickerman, chairs.
<b>Gloucester</b> (May)	. *Geo. J. Tarr Co., fish curing, etc., Mass., \$25,000.
(Jun)	. Cape Ann Machine Co., Mass., \$10,000.
<b>Grafton</b> (Mar)	. *Forbush Shoe Co., Mass., \$25,000.
<b>Greenfield</b> (Feb)	. Cady & Cutler, shoes.
(Mar)	. Butler Chuck Co., drill chucks, Mass., \$10,000.
(May)	. *E. A. Hall Publishing Co., Mass., \$10,800.
(Jun)	. Rogers, Lunt, & Bowlen Co., silverware, Mass., \$8,500.
(Jul)	. T. Morey & Son Co., printing and publishing.
(Aug)	. *Goodell M'fg Co., tools, Mass., \$15,000.
<b>Harvard</b> (Dec)	. Still River Slate & M'fg Co., Mass., \$5,000.
<b>Haverhill</b> (Oct)	. Allen Machine Co., Mass., \$8,000. W. W. Appleton & Co., cut shoe stock.
(Nov)	. Nichols & Files, counters, soles, etc.
(Dec)	. Haverhill Box Board Co., N. Y., \$500,000.
(Jan)	. Federation Shoe Co., Mass., \$40,000.
(Feb)	. Howard L. Porter, shoes. Merrill Thread Co., cotton yarn, etc. *The Gilman Hat Co., Mass., \$20,000.
(Jul)	. E. C. Prescott & Co., shoe tips, etc.
(Aug)	. Virgin & Mansell, heels, lifts, etc.
<b>Holbrook</b> (Nov)	. Tripp-Lincoln Shoe Co., boots and shoes.
<b>Holliston</b> (Apr)	. Chas. A. Dawson & Son, woollens.
<b>Holyoke</b> (Oct)	. Wire Novelty Co., clips, towel racks, etc.
(Dec)	. Eureka Cigar Co.
(Mar)	. Cressy Thread Co., cotton thread.
(May)	. *Beebe-Webber Co., woollens, Mass., \$100,000. John E. Brown, mercerized spool cotton thread.
(Sep)	. †Excelsior Paper Co., Conn., \$60,000.
<b>Hudson</b> (Oct)	. *F. Brigham & Gregory Co., shoes, Maine, \$250,000.
<b>Hyde Park</b> (Dec)	. *Geo. W. Stafford Co., machinery, N. Y., \$300,000.
<b>Lawrence</b> (Dec)	. Hollings & Smith, woollens.
(Jan)	. Champion-Interuational Co., paper, Maine, \$650,000.
(Mar)	. Bornstein Vise & Wrench Co., Mass., \$25,000. James Maddock, cotton yarn, etc. Rutter Bros., woollens.
<b>Leominster</b> (Mar)	. †Leominster Comb Co., Maine, \$100,000.
(Jun)	. Sterling Comb Co., Mass., \$25,000.
<b>Lowell</b> (Oct)	. Lowell Germania Chemical Co., Mass., \$10,000. *O'Sullivan Bros. Co., rubber heels, etc., Mass., \$20,000. Spaulding & Swett Co., shoes and slippers, Mass., \$40,000.
(Dec)	. *New England Bunting Co., Mass., \$50,000.
<b>Lynn</b> (Oct)	. Crudder & Le Bran, cut soles, etc. La Rouche & Bellerose, shoes.
(Nov)	. Morris Caunt Shoe Co.



*New Establishments, Firms, Corporations, Industries, etc. — Continued.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, GOODS MADE, STATE IN WHICH INCORPORATED, AND AUTHORIZED CAPITAL.
<b>Lynn</b> (Dec)	A. S. Alley Co., shoes, Mass., \$5,000. Newhall & Adamson, shoes. Watson Shoe Co., Mass., \$25,000. *William Lummus Co., leather, Mass., \$9,500.
(Feb)	Foley & Kane, top lifts, etc. Goldena M'f'g Co., washing compound, Mass., \$5,000.
(May)	Boston & Lynn Cut Sole Co. Chas. S. Bates, shoes.
(Jun)	Eagle Shoe Co. Lawton & Adams, shoes.
(Jul)	Seal & Smith Co., shoes, Mass., \$5,100.
(Sep)	Marshall, Perkins, & Co., shoes.
<b>Malden</b> (May)	Middlesex Underwear Co.
(Jul)	John H. Parker, shoes.
<b>Mansfield</b> (Dec)	Mansfield Factory & Power Co., Mass., \$6,000.
<b>Marblehead</b> (Jan)	John Lancy, Jr., shoes.
(Apr)	Curtis, Walsh, & Fustis, shoes.
<b>Medford</b> (Jan)	Medford Woollen M'f'g Co., felt boots, Mass., \$50,000.
(Mar)	†Boston Steel & Iron Co., N. J., \$1,000,000.
<b>Merrimac</b> (Mar)	*Merrimac Plating Co., metal ornaments, etc., Mass., \$10,000.
<b>Methuen</b> (Jan)	Spicket Falls Bleach & Dye Works.
(Aug)	Joseph Bentley, chairs.
<b>Middleton</b> (Feb)	Merritt M'f'g Co., incandescent lamps.
<b>Milford</b> (Jul)	†Milford Pink Granite Co., N. J., \$1,000,000.
<b>Millbury</b> (Mar)	Holbrook M'f'g Co., linen goods, Mass., \$30,000.
(Apr)	Worcester Steel Foundry Co., electric railway bonds.
<b>Millis</b> (Aug)	National Overall Co., jumpers, etc.
<b>Milton</b> (Apr)	Robert Robertson, granite quarrying.
<b>Monson</b> (Nov)	Buckowina Woollen Mills (J. H. Loudon).
<b>Montague</b> (Mar)	Massachusetts Brick Co., Mass., \$20,000.
<b>Natick</b> (Nov)	*Pratt Shoe Co., Mass., \$60,000.
(Jan)	Natick Machine Co., machinists' work.
<b>Needham</b> (Jul)	U. S. Braiding Co., Maine, \$500,000.
<b>New Bedford</b> (Apr)	Butler Mills, yarns, cotton cloth, etc., Mass., \$1,000,000. New Bedford Motor M'f'g Co., automobiles, etc.
(Jun)	Gosnold Mills Co., cottons, Mass., \$1,100,000.
<b>Newburyport</b> (Feb)	*H. H. Tingley Co., shoe dressing, Mass., \$25,000.
(Jun)	*C. A. Ellis Co., shoes, Mass., \$100,000. *Johnson Educator Food Co., Mass., \$10,000.
(Sep)	*Newburyport Counter Co., shoe counters, Maine, \$10,000.
<b>Newton</b> (Dec)	Saxony Worsted Mills, yarns.
<b>Norfolk</b> (Oct)	City Mills Paper Co., R. I., \$100,000.
<b>No. Adams</b> (Oct)	Hall-Heffernan Brush Co., rotary brushes, etc.
<b>N. Attleborough</b> (Dec)	*T. I. Smith Co., jewelry, R. I., \$150,000.
<b>Oxford</b> (Aug)	Weise & Nichols, fancy cassimeres.
<b>Palmer</b> (May)	A. W. Holbrook, bag renovating.
(Aug)	Harvest Hat Co., Mass., \$25,000.
<b>Peabody</b> (Jan)	Ideal Leather Co., pigskin leather.
(Mar)	John Dunney, morocco leather.
(Apr)	†Newall & Knowlton, grease extracts, Mass., \$20,000.
(May)	John J. Lynn, chrome sheep leather.
(Jun)	Geo. A. Messer, belt leather.
<b>Pepperell</b> (May)	American Metallic Casket Co.
(Jul)	Noble C. Griffin, shoes.

*New Establishments, Firms, Corporations, Industries, etc. — Continued.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, GOODS MADE, STATE IN WHICH INCORPORATED, AND AUTHORIZED CAPITAL.
<b>Pittsfield</b> (Oct)	. Heno Trolley Harp Co., electric car attachments.
(Dec)	. Jewell Storage Battery Co., Maine, \$1,000,000.
(Mar)	. *Z. A. Ward Woodworking Co., Mass., \$15,000.
(Jun)	. *New England Lime Co., A N. Y., \$1,500,000.
(Aug)	. Zimmerman Shoe Co., Minn., \$32,000.
<b>Plymouth</b> (Jul)	. *Geo. Mabbett & Sons Co., worsteds, Mass., \$40,000. *Memorial Press, Mass., \$5,000.
<b>Randolph</b> (Oct)	. Bradley-Hagney Co., shoes, Mass., \$25,000.
(Nov)	. Randolph Shoe Co. <sup>B</sup>
(Jul)	. Rubber Hide Co., rubber shoes.
<b>Reading</b> (Jan)	. J. H. Chase M'f'g Co., shoe shanks.
<b>Rockland</b> (Jan)	. Rockland Webbing Co., Mass., \$25,000.
<b>Salem</b> (Oct)	. Jacob James, morocco leather.
(Feb)	. Alden B. Sleeper Co., calfskin leather.
(Mar)	. *John P. Keefe Leather Co., Mass., \$5,000.
(Apr)	. *E. W. Ford Co., shoes, Mass., \$10,000.
(May)	. *Salem Heel Co., Maine, \$10,000. Mass. Leather M'f'g Co., belts, bags, etc.
(Jun)	. Bay State Match Co., Maine, \$500,000.
(Sep)	. Henry K. Barnes, mineral tanned leather.
<b>Shelburne</b> (Nov)	. D. E. Farley, knit goods.
<b>Somerville</b> (Aug)	. Middlesex Paper Co., wrapping paper.
<b>Southbridge</b> (Apr)	. *Harrington Cutlery Co., Mass., \$30,000. Mass. Graphite Co., black lead quarrying.
<b>So. Hadley</b> (Mar)	. American Chemical Brick & Stone Co.
<b>Spencer</b> (Jan)	. H. C. Leavitt, woollens.
<b>Springfield</b> (Oct)	. F. A. Bassette Co., publishers, Mass., \$17,000. Rhode Island Worsted Co., R. I., \$40,000.
(Nov)	. †Munder Electric Co., electrical goods, Maine, \$50,000.
(Feb)	. *Hampden Lumber Co., Mass., \$75,000. Miles Morgan Cigar Co. <sup>C</sup>
(Mar)	. *Royal Candy Co., Mass., \$9,000.
(Apr)	. *Bemis Car Truck Co., N. J., \$300,000.
(May)	. Aromatus Co., patent coffee pots. Shepherd Novelty Co., Mass., \$15,000.
(Aug)	. American Fluff Rug Co., N. J., \$22,000.
<b>Stoneham</b> (Jul)	. Stone & Forsyth, folding boxes.
<b>Taunton</b> (Oct)	. Fred. J. Henry, rugs. Globe Nail Co., tacks, nails, etc. Cohannet Silver Co., silverware. Whittenton Pearl Works Co., Mass., \$5,000.
(May)	. Taunton Wool Stock Co., Mass., \$21,000.
(Jun)	. †Huber-Hodgman Printing Press Co., Mass., \$240,000.
(Jul)	. Harrington Press, printing, Mass., \$8,000. Taunton Spindle Co., shuttles.
<b>Uxbridge</b> (Feb)	. Mumford River Tape Co., narrow fabrics.
(May)	. John C. Scott & Co., satinetts.
<b>Waltham</b> (Oct)	. †Boston M'f'g Co., 1901, cottons, Mass., \$400,000. Waltham Bleachery & Dyeworks, Mass., \$480,000.
<b>Ware</b> (Sep)	. A. & J. Malboen, dyeing.
<b>Warren</b> (Nov)	. Crossman Edge Tool Co., Mass., \$7,000.

A Absorbed eleven properties.

B In May, went out of business.

C In July, established also in Worcester.

*New Establishments, Firms, Corporations, Industries, etc. — Concluded.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, GOODS MADE, STATE IN WHICH INCORPORATED, AND AUTHORIZED CAPITAL.
<b>Webster</b> (Dec) . . .	Corbin Son & Co., shoes.
<b>Westborough</b> (Oct)	Westboro Hat Co., Mass., \$15,000.
(Dec)	Westboro Weaving Co., Mass., \$25,000.
<b>W. Brookfield</b> (Aug)	*Olmstead-Quaboag Corset Co., Mass., \$55,000.
<b>Westfield</b> (Dec) . . .	Chas. J. Moore, automobiles.
(Mar) . . .	William Salmon, braids.
<b>Whitman</b> (Mar) . . .	†Commonwealth Shoe & Leather Co., Maine, \$355,000.
<b>Williamsburg</b> (Jun)	Polmatier & Addis, cutlery.
<b>Winchendon</b> (Mar)	*Clark Bobbin Co., Maine, \$50,000.
(May)	Alaska Freezer Co., N. H., \$100,000.
<b>Worcester</b> (Oct) . . .	Woodbury-Carlton Co., engravers, Mass., \$8,000.
(Nov) . . .	Hough Porch Shade Co., N. Y., \$200,000.
(Jan) . . .	Morgan Motor Co., Mass., \$50,000.
	*Norcross Bros. Co., contractors, Mass., \$1,500,000.
	*William Allen & Sons Co., boilers, Mass., \$40,000.
	Worcester Umbrella Co., Mass., \$25,000.
(Feb) . . .	R. L. Golbert & Co., lasts.
(May) . . .	*Campbell Perfumery Co., Maine, \$100,000.
	Clinton Alvord, carpet machinery.
	Globe M'f'g Co., combs and horn goods.
	Worcester Box Co., boxes.
(Jun) . . .	Hunter M'f'g Co., can openers, Maine, \$80,000.
	†L. W. Pond Machine & Foundry Co., Maine, \$90,000.
	Vanilla Crystal Co., flavoring crystals.
	Vellumoid Paper Co., patent process paper.
	†Warren Leather Goods Co., Mass., \$30,000.
	*Worcester Surprise Spring Bed Co., Maine, \$50,000.
(Jul) . . .	H. E. Pender Machine Co., textile machinery.

There are 272 instances recorded in the preceding table of the establishment of new firms and corporations, including the changes from private firms to corporations, and they are distributed throughout the following industries: Agricultural Implements, 1; Artisans' Tools, 4; Boots and Shoes, 57; Boxes, Barrels, Kegs, etc., 3; Boxes (Paper), 2; Brick, Tiles, and Sewer Pipe, 2; Brooms, Brushes, and Mops, 2; Building, 2; Burial Cases, Caskets, Coffins, etc., 1; Buttons and Dress Trimmings, 3; Carpetings, 3; Carriages and Wagons, 2; Cement, Kaolin, Lime, and Plaster, 2; Chemical Preparations (Compounded), 1; Clothing, 7; Cotton Goods, 13; Crayons, Pencils, Crucibles, etc., 1; Drugs and Medicines, 2; Earthen, Plaster, and Stone Ware, 1; Electrical Apparatus and Appliances, 5; Fertilizers, 1; Fireworks and Matches, 1; Flax, Hemp, and Jute Goods, 2; Food Preparations, 9; Furniture, 9; Hosiery and Knit Goods, 1; Ivory, Bone, Shell, and Horn Goods, etc., 3; Jewelry, 4; Leather, 11; Leather Goods, 3; Lumber, 1; Machines and Machinery, 20; Metals and Metallic Goods, 24;

Models, Lasts, and Patterns, 2; Musical Instruments and Materials, 1; Paper, 6; Paper Goods, 1; Perfumes, Toilet Articles, etc., 1; Polishes and Dressing, 2; Printing, Publishing, and Bookbinding, 13; Print Works, Dye Works, and Bleacheries, 3; Railroad Construction and Equipment, 1; Rubber and Elastic Goods, 4; Silk and Silk Goods, 1; Stone, 3; Straw and Palm Leaf Goods, 3; Tallow, Candles, Soap, and Grease, 2; Tobacco, Snuff, and Cigars, 6; Toys and Games (Children's), 1; Woollen Goods, 12; and Worsted Goods, 7.

The authorized capital stock of those corporations mentioned in the preceding table which were originally established as private firms amounted in the aggregate to \$7,441,300, invested in the following industries: Artisans' Tools, \$15,000; Boots and Shoes, \$555,000; Building, \$1,500,000; Cement, Kaolin, Lime, and Plaster, \$1,850,000; Clothing, \$75,000; Drugs and Medicines, \$500,000; Earthen, Plaster, and Stone Ware, \$25,000; Food Preparations, \$344,000; Furniture, \$325,000; Jewelry, \$175,000; Leather, \$14,500; Lumber, \$75,000; Machines and Machinery, \$490,000; Metals and Metallic Goods, \$147,000; Perfumes, Toilet Articles, etc., \$100,000; Polishes and Dressing, \$25,000; Printing, Publishing, and Bookbinding, \$175,800; Railroad Construction and Equipment, \$300,000; Rubber and Elastic Goods, \$20,000; Tobacco, Snuff, and Cigars, \$540,000; Woollen Goods, \$100,000; and Worsted Goods, \$90,000.

The aggregate authorized capital stock of new corporations was \$18,338,200, distributed throughout the following industries: Agricultural Implements, \$100,000; Artisans' Tools, \$7,000; Boots and Shoes, \$252,100; Boxes, Barrels, Kegs, etc., \$500,000; Brick, Tiles, and Sewer Pipe, \$20,000; Brooms, Brushes, and Mops, \$50,000; Building, \$6,000; Buttons and Dress Trimmings, \$5,000; Carpetings, \$37,000; Chemical Preparations (Compounded), \$10,000; Clothing, \$25,000; Cotton Goods, \$2,635,000; Drugs and Medicines, \$10,000; Electrical Apparatus and Appliances, \$1,050,000; Fireworks and Matches, \$500,000; Flax, Hemp, and Jute Goods, \$30,000; Food Preparations, \$105,000; Furniture, \$235,000; Ivory, Bone, Shell, and Horn Goods, etc., \$25,000; Jewelry, \$30,000; Leather, \$37,500; Leather Goods, \$65,000; Machines and Machinery, \$10,198,000; Metals and Metallic Goods, \$125,-

500; Musical Instruments and Materials, \$5,000; Paper, \$900,000; Paper Goods, \$10,000; Printing, Publishing, and Bookbinding, \$108,000; Print Works, Dye Works, and Bleacheries, \$480,000; Rubber and Elastic Goods, \$35,000; Stone, \$5,000; Straw and Palm Leaf Goods, \$40,000; Tallow, Candles, Soap, and Grease, \$5,000; Tobacco, Snuff, and Cigars, \$1,100; Toys and Games (Children's), \$15,000; Woollen Goods, \$71,000; and Worsted Goods, \$605,000.

The total amount of authorized capital in those corporations which were reorganized was \$18,445,000, and was distributed throughout the following industries: Artisans' Tools, \$35,000, Boots and Shoes, \$4,355,000; Buttons and Dress Trimmings, \$3,000,000; Cotton Goods, \$400,000; Electrical Apparatus and Appliances, \$50,000; Food Preparations, \$7,500,000; Ivory, Bone, Shell, and Horn Goods, etc., \$100,000; Leather Goods, \$30,000; Machines and Machinery, \$590,000; Metals and Metallic Goods, \$1,015,000; Paper, \$60,000; Printing, Publishing, and Bookbinding, \$240,000; Stone, \$1,000,000; Tallow, Candles, Soap, and Grease, \$20,000; and Tobacco, Snuff, and Cigars, \$50,000.

The aggregate amount of capital stock created under new corporations, changes to corporations from private firms, and reorganizations was \$44,224,500. Of this, 41.46 per cent was devoted to new corporations; 16.83 per cent to changes from private firms to corporations, and 41.71 per cent to reorganization of corporations.

Of the total amount of authorized new capital (\$44,224,500), \$8,035,500, or 18.17 per cent, was created under the laws of Massachusetts, and, in conformity with the State laws, that amount was paid in; \$19,390,000, or 43.84 per cent, was created under the laws of Maine; \$9,937,000, or 22.47 per cent, under the laws of New Jersey; \$3,000,000, or 6.78 per cent, under the laws of Delaware; \$3,350,000, or 7.58 per cent, under the laws of New York; \$320,000, or 0.72 per cent, under the laws of Rhode Island; \$100,000, or 0.23 per cent, under the laws of New Hampshire; \$60,000, or 0.14 per cent, under the laws of Connecticut; and \$32,000, or 0.07 per cent, under the laws of Minnesota. How much, if any, of this capital as authorized by States other than Massachusetts was paid in, it has been impracticable to ascertain.

### Changes in Firms, Corporations, Location of Plants, etc.

In the following presentation are shown changes in firms by dissolution, retirement or admission of partners; consolidation of firms or corporations; the sale of plants in whole or in part; the sale of plants to combinations; the removals from one town to another in Massachusetts; removals out of the State; removals from other States to Massachusetts; the closing down permanently of certain establishments; and the increases and decreases in the amount of authorized capital stock. The changes from private firms to corporations as well as those corporations which were reorganized are included in the table previously presented:

#### *Changes in Firms, Corporations, Location of Plants, etc.*

CITIES, TOWNS, AND MONTHS.	NAMES OF FIRMS AND CORPORATIONS AND CHARACTER OF CHANGES MADE.
<b>Abington</b> (Mar)	. Wm. Brock, shoe dressing, sold to C. S. Pierce, Brockton.
(Jun)	. W. E. Lyon, shoes, sold lasts, etc., to Millett, Woodbury, & Co., Beverly.
<b>Acton</b> (Jun)	. B. M. Kimball & Son, leather finishing, dissolved, no successor.
<b>Amesbury</b> (Oct)	. J. Nelson Lane, carriages, succeeded by J. N. Lane & Co.
(Nov)	. Briggs Carriage Co. increased capital stock \$20,000.
<b>Amherst</b> (Jul)	. Levi E. Dickinson, boxes, sold to Angus & Seitz.
<b>Athol</b> (Oct)	. Athol Paper Box Co., D. E. Gilkey retired.
(Apr)	. Cottager Co., newspaper, sold to L. Terwilliger, New York.
	O. J. Powers, hats, bought Goddard & Manning shop and re-modeled same.
(Aug)	. Hill & Greene, shoes, consolidated with Dalton Shoe Co.
<b>Attleborough</b> (Apr)	Fred H. Hill & Co. changed character of product from jewelry to patent article of machinery.
(Jul)	Mossberg Wrench Co. moved to Central Falls, R. I.
<b>Barre</b> (Feb)	. Chas. G. Allen & Co. leased L. S. Heald & Co.'s foundry.
<b>Berlin</b> (Sep)	. J. H. Parker, shoes, moved to Malden.
<b>Beverly</b> (Jan)	. Curtis & Lee, shoes, dissolved.
(Feb)	. Bray, Stanley, & Webber, shoes, bought shoe-stitching plant of Curtis & Lee.
(May)	. Chas. S. Bates, shoes, moved to Lynn.
	F. A. Seavey & Co., shoes, dissolved; Geo. E. Rowe & Co. continued retaining old name.
(Jul)	. Mader, Hanscom, & Co., shoes, dissolved; Forrest Hayward succeeded.
<b>Boston</b> (Oct)	. Boston Ice Cream Co. increased capital stock \$6,000.
	Broadway M'fg Co., leather coats, dissolved.
	J. F. Merrill, estate, moved to Haverhill and changed name to Merrill Thread Co.
	Temple Glove M'fg Co. sold to new company.
(Dec)	. J. Donovan & Co., slippers, moved machinery to Everett.
	F. O. Plummer, telephones, discontinued.

*Changes in Firms, Corporations, Location of Plants, etc. — Continued.*

CITIES, TOWNS, AND MONTHS.	NAMES OF FIRMS AND CORPORATIONS AND CHARACTER OF CHANGES MADE.
<b>Boston</b> (Dec) . . .	Wm. R. Brown, drugs, sold to A. M. Townsend, Inc., and latter disposed of all manufacturing to E. L. Patch Co.
(Jan) . . .	Bay State Cut Sole Co. succeeded by Ruhe & Lancaster. Forman & Papp, hats and caps, dissolved. Martin Blacking Co. sold to Whittemore Bros., Cambridge. W. W. Potter Shank Co. sold to Geo. C. Bosson, Jr. who sold to American Shoe Finding Co.
(Mar) . . .	C. W. Hodgdon & Co. sold to Hodgdon Brass Works. Echo Knitting Mills discontinued. A. E. Lincoln sold to United Shoe Machinery Co. Morse Thread Co., machinery in idle plant moved to Willimantic, Conn.
(Apr) . . .	Geo. H. Stevens Shank Co. sold to Geo. W. Weymouth who subsequently sold to American Shoe Finding Co. B. S. Moulton & Co., picture frames, dissolved. Hancock Inspirator Co. sold to United Injector Co.
(Jun) . . .	Boston Button Co. absorbed by United Button Co.
(Jul) . . .	Stone & Forsyth, folding boxes, moved to Stoneham. A. Hetschell, thermometers, etc., dissolved. E. W. Noyes Co., picture frames, sold to Bigelow & Jordan. Holway Bros. & Woodbury, sails, dissolved.
<b>Braintree</b> (May) . .	John C. Trott Co., absorbent cotton, dissolved.
<b>Bridgewater</b> (Nov)	W. H. McElwain & Co., shoes, moved sole-cutting department to Boston.
<b>Brockton</b> (Oct) . .	Monarch Rubber Co. reduced capital stock \$27,000.
(Nov)	Tripp-Lincoln Shoe Co. moved to Holbrook.
(Dec)	Field Bros., shoes, dissolved; Field Bros. & Gross Co. succeeded; (Jun) bought factory of McCarty, Sheehy, & Kendrick. Fletcher Shoe Co.; consolidation of T. D. Barry & Co. and Joyce & Fletcher. Geo. E. Keith Co., shoes, increased capital stock \$250,000. Mulligan & Drislane, box toes, succeeded by Gowdy & Drislane.
(Jan)	Golden Shoe Co. succeeded by Golden Sporting Shoe Co.
(Feb)	O. A. Miller sold shoe-tree plant to United Shoe Machinery Co. Briggs & Brock Bros. Co., blackings, dissolved. Lavers & Perry, dies, succeeded by Perry, Andrews, & Co.
(Mar)	Oakman & Low, shoes, succeeded by J. E. Tibbetts.
(May)	J. B. Lewis Co., shoes, reduced capital stock \$63,000. Myron F. Thomas, shoes, discontinued.
(Jun)	McCarty, Sheehy, & Kendrick, shoes, dissolved; Kendrick & McCarty succeeded; latter dissolved and factory sold to Field Bros. & Gross Co. E. & L. C. Keith, shoes, dissolved.
(Jul)	J. W. Terhune Shoe Co. sold to J. W. Spence. T. A. Norris Machine Co. sold to United Shoe Machinery Co.
<b>Brookfield</b> (Dec) . .	Mann & Stevens, woollens, bought Otsego Mill property.
(Mar)	Chas. H. Moulton & Co., shoes, closed Dover (N. H.) factory and moved machinery here.
(Aug)	Lashaway Carriage & Wheel Co. increased capital stock \$100,000.
<b>Cambridge</b> (Jan) . .	Whittemore Bros. & Co., shoe polishes, bought Liquid Air Co.'s plant. Josselyn & Co., sheet metal goods, sold to Dover Stamping & M'f'g Co.

*Changes in Firms, Corporations, Location of Plants, etc. — Continued.*

CITIES, TOWNS, AND MONTHS.	NAMES OF FIRMS AND CORPORATIONS AND CHARACTER OF CHANGES MADE.
<b>Cambridge</b> (Feb) .	Laminar Fibre Co. absorbed by Am. Hard Fibre Co.
(Mar) .	Ella S. Saltman, overalls, succeeded by James Saltman.
(Jun) .	Bay State Metal Works dissolved.
(Jul) .	Francis Pelkey, brooms, discontinued.
<b>Charlton</b> (May) .	Seth L. Carpenter, saw and grist mill, sold to Marcus W. Carpenter.
<b>Chelmsford</b> (Mar) .	Geo. C. Moore bought business of Silver & Gay Co., and continued as No. Chelmsford Machine Co.
(Apr) .	H. C. Sweetser, grist mill, succeeded by Sweetser & Day.
<b>Chelsea</b> (Mar) .	Bartels & Thelen, shoes, E. C. Grant admitted; name changed to Bartels, Thelen, & Co.
(Apr) .	Wright & Aldoes, shoes, dissolved; Wright continued.
(May) .	Magoun Leather Co. discontinued; no successor.
<b>Chester</b> (Dec) .	Henry Smith, whips, sold shop to Hampden Corundum Wheel Co.
<b>Chicopee</b> (Jul) .	Chicopee Envelope Co. sold to Chicopee Novelty Co.
(Aug) .	Am. Bicycle Co. sold No. 3 mill to J. Stevens Arms & Tool Co.
<b>Clarksburg</b> (Dec) .	Strong, Hewat, & Co., woollens, E. H. Farnsworth retired.
(Jan) .	No. Adams Brush Co. sold real estate to H. L. Bradford and business and machinery to Hall-Heffernan Co., No. Adams.
<b>Conway</b> (Nov) .	De Wolfe & Hassell, shoes, bought factory occupied by them for past 5 years.
<b>Dalton</b> (Nov) .	Renfrew M'f'g Co., cottons, closed local plant; moved machinery to Adams.
(Dec) .	Andrews & Reddick, woollens, dissolved; later, started as W. H. Reddick & Co.; (Sep) Reddick sold his interest to Theo. L. Pomeroy of Pittsfield.
<b>Danvers</b> (Dec) .	Eaton & Armitage, shoes, dissolved.
(Mar). .	Perkins, Downing, & Knapp, leather, dissolved; Perkins & Knapp continued.
<b>Dedham</b> (Jul) .	Goding Bros., meal, sold to E. D. Palmer & Co.
<b>Dracut</b> (Dec) .	Merrimack Woollen Mills sold to Michael Collins.
<b>Easthampton</b> (Jun)	Williston & Knight Co., ivory buttons, absorbed by United Button Co.; local plant shut down and machinery moved to Springfield.
<b>Everett</b> (Oct) .	Boston Varnish Co. increased capital stock \$15,000.
<b>Fall River</b> (Oct) .	Arctic Ice & Cold Storage Co. absorbed plants of Wm. Durfee, Fall River Ice Co., Hygeia ice Co., and Crystal Ice Co.
(Nov) .	Stevens M'f'g Co., cotton goods, increased capital stock \$350,000.
(Dec) .	Metacomet Mills sold to M. C. D. Borden.
(Jan) .	Annawan M'f'g Co. sold to M. C. D. Borden.
	Barnaby M'f'g Co., gingham, Jas. B. Harley bought controlling interest; (Apr) increased capital stock to \$500,000.
	Geo. Congdon, fancy cottons, discontinued.
(Mar) .	Fall River Machine Co. dissolved; land and buildings sold to M. C. D. Borden and machinery to various persons.
(Sep) .	Goulet, Terriano, & Co., hats, succeeded by Goulet, Mayall, & Co.
<b>Fitchburg</b> (Jan) .	Belding Shoe Co. machinery sold to Alton (N. H.) Shoe Co.
(Apr) .	Simonds Rolling Machine Co. sold to R. E. Forbes.
	Bartow & Cookson, cotton goods, burned out and discontinued.
(Jul) .	Heywood & Wilson, foundry, sold to Moses Perreault.
<b>Foxborough</b> (Jul) .	Van Choate Electric Co. sold to Simon Vorenberg and others.
<b>Framingham</b> (Oct)	Gregory, Shaw, & Co., shoes, shut down permanently.



*Changes in Firms, Corporations, Location of Plants, etc. — Continued.*

CITIES, TOWNS, AND MONTHS.	NAMES OF FIRMS AND CORPORATIONS AND CHARACTER OF CHANGES MADE.
<b>Framingham</b> (Jan)	H. H. Wilcox Co., calendar pads, burned out and moved to Chicago, Ill. A. H. Ordway & Co., rattan chairs, burned out and discontinued.
(Jun)	Woodward M'fg Co., shoe machinery, sold at auction.
<b>Franklin</b> (Jul)	Franklin Knitting & Yarn Mill sold to Jacob Geb; latter formed Franklin Yarn Co.
<b>Gloucester</b> (Dec)	Davis Bros., fish curing, discontinued.
<b>Grafton</b> (Jul)	Farnumsville Cotton Mill passed into possession of A. F. Knight, Woonsocket, R. I.
<b>Gt. Barrington</b> (Sep)	Endrick Mills, woollens, last of machinery sold and plant shut down permanently.
<b>Greenfield</b> (Nov)	N. S. Cutler began making shoes in Cutler, Lyons, & Field's factory; (Feb) W. G. Cady admitted and name changed to Cady & Cutler.
(Apr)	Geo. C. Lunt bought machinery, etc., of A. F. Towle & Son Co.; later, formed company for manufacture of silverware.
(May)	Automatic Machine Co. bought property of N. E. Machine Screw Co., Thompsonville, Conn.; moved it here, and increased capital stock to \$30,000. Mass. Tool Co. increased capital stock \$15,000.
(Aug)	E. F. Reece M'fg Co., tools, reorganized.
(Sep)	A. F. Towle & Son Co. sold idle plant to T. Morey & Son Co.
<b>Haverhill</b> (Nov)	Pray-Small Co., shoes, dissolved. Thayer, Maguire, & Field, shoes, moved machinery here from Hampton, N. H.
(Feb)	Howard L. Porter, shoes, moved here from Concord, N. H. Stevens Felt Shoe Co. dissolved; Dudley F. Stevens continued.
(Mar)	E. A. Jennings, shoes, sold machinery to A. L. Toppan. H. E. Adams, slippers, discontinued.
(May)	Hovey & Weeks, lasts, dissolved; Hovey continued.
(Jun)	Wiley & Brickett, shoe contractors, dissolved; machinery sold to Allen Machine Co. Jos. N. Blair, contract heeling, sold to G. B. Leavitt.
(Jul)	P. N. Wadleigh, shoes, retired; Hilliard & Tabor continued. B. R. Clark, shoe counters, discontinued. I. N. Emerson, slippers, sold to E. Murray.
(Aug)	Federation Shoe Co. moved to Lynn. F. M. Hodgdon, shoes, moved to Derry, N. H. Webster & Tabor, slippers, dissolved; Webster Shoe Co. continued.
<b>Hingham</b> (May)	Hingham Cordage Co.'s property sold to P. L. Connor, Montreal, Can.
<b>Hinsdale</b> (Oct)	Hinsdale Woollen Co. started up Broad Mill after year's shut-down.
<b>Holliston</b> (Apr)	Holliston Mills, woollens, sold to Dawson M'fg Co., Holden.
<b>Holyoke</b> (Oct)	Holyoke Thread Co. increased capital stock \$50,000.
(Feb)	W. P. Griswold, confectionery, dissolved; business changed hands two or three times until formation of Holyoke Caudy Co.
(May)	Beebe, Webber, & Co., woollens, changed to Beebe-Webber Co. and leased Connor's New York Mill. Holyoke Halter M'fg Co. sold to Jas. J. Delaney.
(Sep)	Cressy Thread Co. dissolved; Geo. W. Cressy continued.
<b>Hopkinton</b> (Feb)	Crooks, Root, & Co., shoes, discontinued.

*Changes in Firms, Corporations, Location of Plants, etc.—Continued.*

CITIES, TOWNS, AND MONTHS.	NAMES OF FIRMS AND CORPORATIONS AND CHARACTER OF CHANGES MADE.
<b>Lawrence</b> (Oct)	. Brown & Ackroyd, woollens, Ackroyd retired; Brown & Whittier succeeded. E. Frank Lewis, wool scouring, bought Butler Mill; machinery sold to Geo. C. Moore, Chelmsford. Kimball Bros., shoes, dissolved.
(Dec)	. Hollings & Smith, woollens, moved here from Windham, N. H.
(Jan)	. Arlington Mills, cottons and woollens, increased capital stock \$500,000. Champion-International Co., paper, absorbed Champion Card & Paper Co., Pepperell, and Russell Mills of this city. W. J. Jones, monuments, succeeded by John D. Newall.
(Mar)	. Rutter Bros., woollens, moved here from Lakeport, N. H.
(Jul)	. Mitchell Paper Co. sold to United Box Board & Paper Co.
(Aug)	. Weld Bobbin & Spool Co. sold to Union Shuttle Co.
(Sep)	. Archibald Wheel Co., A. E. Archibald retired.
<b>Lee</b> (May)	. . . Am. Writing Paper Co. sold May Mill to a New York syndicate.
(Sep)	. . . Lee Marble Co., dissolved; new company continued under same name.
<b>Lenox</b> (Jun)	. . . Hutchinson Bros. sold to New England Lime Co.
<b>Leominster</b> (Apr)	. . . Globe M'fg Co., horn goods, moved to Worcester. C. H. Brigham Co., celluloid combs, discontinued.
(Jun)	. . . Boutelle Furniture Co. sold idle plant to Union Machine Co., Fitchburg.
<b>Lexington</b> (Dec)	. . . Grant Gear Works sold at auction.
<b>Lowell</b> (Oct)	. . . Fifield Tool Co. sold by receivers to Geo. W. Fifield.
(Nov)	. . . Whittier Cotton Mills sold at auction to C. B. Stevens.
(Mar)	. . . Lowell Bleachery reduced capital stock to \$100,000, then increased it to \$200,000.
(Aug)	. . . The Capucine Co. discontinued business of waterproofing textile fabrics.
<b>Lynn</b> (Oct)	. . . Downs & Watson Co., shoes, dissolved; F. H. Downs continued. G. A. Creighton & Son, shoes, dissolved. P. Lennox & Co., leather, changed name to Eastern Kid Co. W. J. Creighton & Co., shoes, sold machinery and discontinued.
(Nov)	. . . Cook & Hart, slippers, dissolved; J. H. Cook & Co. continued. E. C. Blake & Co., lasts, M. A. Pierce admitted.
(Dec)	. . . Alley & Newhall, shoes, dissolved; B. H. Newhall continued. Bailey, Curtis, & Co., shoes, moved to Philadelphia, Pa. C. H. Henderson of C. H. Henderson & Co., soles, sold interest to W. P. Garritt of Brookline and associated himself with Boston & Lynn Cut Sole Co. in May. Geo. D. Merrill Shoe Co., B. W. Hessberg retired. Killam, Tilton, & Co., shoes, dissolved; Killam, Goller, & Land Co. continued.
(Jan)	. . . Arey, Haddock, & Locke Co., leather, suspended business during year 1902. Day Wood Heel Co.; D. S. Day retired; A. C. Day & C. L. Garratt continued. John Lancy, Jr., shoes, moved to Marblehead. New England Heel Co. dissolved.
(Feb)	. . . C. F. Hutchins, shoes, discontinued. Globe M'fg Co., duck coats, purchased by C. F. H. Freese of Pittsfield, N. H., and business moved to that place.

*Changes in Firms, Corporations, Location of Plants, etc. — Continued.*

CITIES, TOWNS, AND MONTHS.	NAMES OF FIRMS AND CORPORATIONS AND CHARACTER OF CHANGES MADE.
<b>Lynn</b> (Mar) . . .	E. M. Cole & Co., shoes, succeeded by Nicholson, Cole, & Co. Francis C. Stickney & Co., slippers, discontinued.
(Jun) . . .	Morning Star Shoe Co. dissolved; succeeded by G. F. Hedlund and Eagle Shoe Co. R. E. Hilliard, cut stock, dissolved. W. F. Bullock, shoe tools, sold to E. D. Morgan. Weber Leather Co. increased capital stock to \$50,000.
(Jul) . . .	J. T. Austin, innersoles, succeeded by Geo. C. Loudon M'f'g Co. T. J. Kiely & Co., shoes, Wm. Clooney withdrew.
(Aug) . . .	Federation Shoe Co. moved here from Haverhill. Frank E. Willis, shoes, succeeded by F. E. Willis & Co.
<b>Malden</b> (Jul) . . .	John H. Parker, shoes, bought Ross, Turner, & Co.'s factory and moved here from Berlin.
<b>Mansfield</b> (Nov) . . .	Hall & Williams sold to Bay State Tap & Die Co.
(Aug) . . .	Chas. E. Orr, shoe strings, moved to Attleborough.
<b>Marblehead</b> (Oct) . . .	Chas. F. Bartlett & Son, shoes, sold out.
(Nov) . . .	A. J. Foster & Co., morocco, moved to New Hampshire.
<b>Marlborough</b> (Dec) . . .	S. H. Howe Shoe Co. increased capital stock \$300,000.
(Mar) . . .	Rice & Hutchins, shoes, moved machinery here from Kennebunk, Me.
(Jun) . . .	Marlboro Awl & Needle Co. sold to United Shoe Machinery Co.
(Aug) . . .	E. M. Lowe & Co. sold paper box business to Rice & Hutchins.
<b>Methuen</b> (Aug) . . .	Osgood Bros., electrical construction, sold to W. H. Kissam.
<b>Middleton</b> (Feb)' . . .	Merritt M'f'g Co. bought factory to manufacture incandescent lamps.
(Mar) . . .	Middleton Paper Mills sold to Isaac Harris, Boston.
<b>Milford</b> (Nov) . . .	Magid Hope Silk Co. sold at auction. Milford Shoe Co. sold No. 1 factory to Union Rubber Co
<b>Millbury</b> (Nov) . . .	Crane & Waters Mill sold to New York parties.
(Mar) . . .	John Rhodes Warp Co. sold to Francis H. Rice; later, sold to Holbrook M'f'g Co.
<b>Monson</b> (Nov) . . .	Cushman's Branch Mill sold to L. R. Rosenburg, Wales.
<b>Natick</b> (Jan) . . .	Bowker Machine Shop sold to C. E. Bancroft.
<b>New Bedford</b> (Jan) . . .	Dartmouth M'f'g Co. issued \$500,000 in 4½ 20 year bonds.
(Feb) . . .	Reliance M'f'g Co., mill supplies, moved to Providence, R. I. Whitman Mills voted to increase capital stock to \$1,500,000.
(Mar) . . .	Brownell & Co., paints, discontinued.
(May) . . .	Pope's Island M'f'g Co. sold land and buildings to Union Railway Co.; machinery, boilers, etc., to D. E. Makepeace, Attleborough; latter sold to Waterbury (Conn.) Brass Co.
(Jun) . . .	New England Cotton Yarn Co. sold Howland Mills to Gosnold Mills Co. E. P. Dodge M'f'g Co., shoes, succeeded by C. A. Ellis Co.
(Aug) . . .	National Biscuit Co. shut down Snell Bakery permanently.
<b>Newbury</b> (Apr) . . .	Byfield Woollen Co. dissolved; business sold to Samuel Williams & Son, continuing under same name.
<b>Newburyport</b> (Oct) . . .	Merrimac Hat Co. shut down local plant and moved machinery to Amesbury. Towle Silver Factory sold to Newburyport Counter Co.
(Dec) . . .	Baby Shoe Co. dissolved; F. E. Manson continued and J. M. Caunt moved to Lynn.
(Jan) . . .	Doyle-Stevens Counter Co. sold to Newburyport Counter Co.
(Jul) . . .	Bay State Bottling Co. discontinued.
<b>Newton</b> (Dec) . . .	Nonantum Worsted Mill sold to Saxony Worsted Co.
(Jun) . . .	International Automobile & Vehicle Tire Co. moved to New Jersey.

*Changes in Firms, Corporations, Location of Plants, etc.—Continued.*

CITIES, TOWNS, AND MONTHS.	NAMES OF FIRMS AND CORPORATIONS AND CHARACTER OF CHANGES MADE.
<b>No. Adams</b> (Aug) .	No. Adams Paper Box Co. reorganized under name of Wonder Waterproof Package Co.; later, changed to Godfrey & Brown; (Aug) succeeded by Luther P. Brown.
<b>Northampton</b> (Mar)	Lamb Wire Mills plant sold to J. L. Draper, machinery to Am. Steel & Wire Co. Smith Machine Screw Co. discontinued.
<b>Northborough</b> (Mar)	Monroe Saw & Grist Mills sold to Thayer & Rugg, Worcester.
<b>No. Brookfield</b> (Oct)	E. & A. H. Batcheller Co., shoes, shut down permanently and machinery sold.
<b>Orange</b> (Dec) . .	J. B. Reynolds, shoes, shut down permanently; factory sold to Whitman Grocery Co.
<b>Oxford</b> (Sep) . .	Glen Woollen Mills sold to Weise & Nichols.
<b>Palmer</b> (May) . .	G. E. Buck, card clothing, sold to Elijah Ashworth of Fall River.
(Jun) . .	Wright & Colton Wire Cloth Co. increased capital stock to \$350,000.
(Sep) . .	H. Lawrence, brooms, sold factory to Eldredge Hastings.
<b>Peabody</b> (Oct) . .	Brown's Glue Factory sold to American Hide & Leather Co.
(Nov) . .	J. B. Thomas sold beef-packing branch to Swift & Co., Chicago.
(May) . .	National Calfskin Co. increased capital stock to \$400,000. Franklin Osborn occupied part of F. Osborn & Co's plant to manufacture chrome tanned leather.
(Jul) . .	Ideal Leather Co., pigskins, dissolved; Winchester & Wood continued under old name.
<b>Pepperell</b> (Jan) .	Champion Card & Paper Co. absorbed by Champion International Co.
<b>Pittsfield</b> (Feb) .	Pittsfield Heel Stock Co. shut down permanently.
(Mar) . .	Bel Air Mill, cottons, bought by James Wilson. Lenox Sprayer Co. sold to Frank Russell & Co.; idle Teeling Bakery taken for factory.
(Jun) . .	Cheshire Shoe Co. sold to Zimmerman Shoe Co. Pomeroy Mill (lower), occupied by Helliwell & Co., sold to Arthur Merritt, Milton.
(Jul) . .	H. S. Russell sold his boiler plant to E. D. Jones Sons Co. Stanley Electric M'f'g Co. increased capital stock \$1,000,000.
<b>Plymouth</b> (May) .	Plymouth Cordage Co. stockholders voted to increase capital stock to \$1,500,000.
<b>Quincy</b> (Feb) . .	Elcock & Sons sold quarry to Swingle & Falconer. Alphonso Reinhalter, estate, sold quarry to Thos. F. Mannex.
(May) . .	Fegan & Ballou, monuments, sold to John C. Ballou.
(Aug) . .	Mather Launch & Canoe Co. discontinued. <sup>A</sup>
<b>Randolph</b> (May)	Randolph Shoe Co. dissolved.
<b>Raynham</b> (Oct)	Globe Nail Co. moved to Taunton.
<b>Reading</b> (Nov) . .	Geo. H. Ryder's church-organ factory sold to Chas. F. Chadwick.
<b>Rockland</b> (Feb)	Geo. W. Hall succeeded by Simmons & Hall Shoe Co. John Burdette & Son, heels, Edw. Crane admitted.
<b>Russell</b> (Dec) . .	Woronoco Paper Co. increased capital stock \$50,000.
<b>Salem</b> (Dec) . .	Chas. F. Curwen changed name to Salem Elevator Works.
(Mar) . .	Wm. H. Higgins, heels, discontinued.
(Apr) . .	John E. Weymouth & Sons, heels, discontinued. Establishment of John J. Ciuney operated by P. Lennox & Co. of Lynn.

<sup>A</sup> Included plant located in Rowley.

*Changes in Firms, Corporations, Location of Plants, etc. — Continued.*

CITIES, TOWNS, AND MONTHS.	NAMES OF FIRMS AND CORPORATIONS AND CHARACTER OF CHANGES MADE.
<b>Salem</b> (May) . .	J. J. Mitchell, heels, succeeded by Mitchell & Ivers.
(Jun) . .	D. J. Donovan & Co., shoes, discontinued.
<b>Shelburne</b> (May) .	Am. Metallic Casket Co. moved to Pepperell.
<b>Somerville</b> (Jul) .	Meyer Putz Pomade Co. changed name to American Metal Polish Co.
<b>Southbridge</b> (Jan) .	Joseph Lariviere, baker, sold to J. B. Demars.
<b>Spencer</b> (Oct) . .	J. F. Sargent, paper boxes, bought the old Carpenter place.
(Dec) . .	R. H. Long Shoe Co. discontinued local plant and moved machinery to home factory in Springfield.
(Jan) . .	Red Mill sold to H. C. Leavitt, New Boston, Conn.
(May) . .	Beebe, Webber, & Co. sold local mill to Simeon Taylor.
<b>Springfield</b> (Oct) .	U. S. Spring Bed Co. increased capital stock \$10,000.
(Jan) . .	Hampden Corundum Wheel Co. increased capital stock to \$200,000.
(Apr) . .	Sheldon & Lane and Springfield Confectionery Co. sold to Royal Candy Co.
(May) . .	Bausch Machine Tool Co. increased capital stock to \$110,000.
(Jun) . .	Newell Bros. M'f'g Co. absorbed by United Button Co.; later, business of Williston & Knight Co., Easthampton, moved here and consolidated with local plant.
(Jul) . .	Geo. A. Shastey Co., interior woodwork, discontinued.
(Aug) . .	Mutell Regalia Co. discontinued.
<b>Stoneham</b> (Mar) . .	L. P. Benton, shoes, sold stock and machinery to Allen Machine Co., Haverhill.
(Dec) . .	Cream-ette Pure Food Co. moved here from Boston.
<b>Stoughton</b> (Jul) . .	Gardner Shoe Tree Co. absorbed by United Shoe Machinery Co.
<b>Taunton</b> (Oct) . .	Taunton Nickel Plating Co. changed name to Evans Stamping & Plating Co. and bought machinery and property of H. A. Williams M'f'g Co.
(Jun) . .	Jas. Booth & Everett Luther, building materials, succeeded by Jas. Booth and E. I. Luther; to continue as Booth & Luther.
<b>Templeton</b> (Nov) . .	A. H. Turner sold looms in his idle woollen mill.
<b>Tewksbury</b> (Apr) . .	Atherton Machine Co. sold idle plant to John H. Estes, Fall River.
<b>Topsfield</b> (Dec) . .	Edw. H. Garrett, shoes, discontinued.
(May) . .	Herman L. Hobson, shoes, discontinued.
<b>Townsend</b> (Feb) . .	Spaulding Bros. Co., leather board, sold to J. Spaulding & Sons Co., of Milton, N. H., and moved thereto.
<b>Wakefield</b> (Jan) . .	Edw. H. Walton & Son succeeded by Walton Shoe Co. Henry Haskell, shoes, discontinued.
<b>Waltham</b> (Oct) . .	Boston M'f'g Co. reorganized; bleachery and dye works sold to Waltham Bleachery and Dye Works; cloth mill plant sold to new corporation, Boston M'f'g Co. 1901; and knitting machinery sold in May to Wm. Carter & Co., Needham.
(Sep) . .	Am. Watch Tool Co. absorbed by Loop Lock Machine Co., Boston.
<b>Warren</b> (Oct) . .	Knowles Steam Pump Works shut down brass foundry permanently.
(May) . .	T. Elmer Gould (estate) sold grist mill to Norton & Warren.
<b>Watertown</b> (Dec) . .	Hood Rubber Co. increased capital stock to \$800,000. Crystal Springs Manufacturing Co., starch, destroyed by fire and business discontinued.
<b>Wayland</b> (Jul) . .	Noble C. Griffin, shoes, moved to Pepperell.

*Changes in Firms, Corporations, Location of Plants, etc. — Concluded.*

CITIES, TOWNS, AND MONTHS.	NAMES OF FIRMS AND CORPORATIONS AND CHARACTER OF CHANGES MADE.
<b>Westborough</b> (Jul)	Walker & Dunning's idle shoe factory sold to A. D. Puffer, Boston.
<b>Westfield</b> (Oct)	Cressy Thread Co. moved to Springfield.
(Dec)	Columbian Photo Paper Co. consolidated with Anthony & Scoville Co., New York.
(May)	Pomeroy & Van Deusen dissolved; H. M. Van Deusen Whip Co. succeeded.
<b>Westhampton</b> (Apr)	J. D. Norton of J. D. Norton & Son, wooden goods, died; estate settled and real estate passed to R. W. Clapp; business now run by the latter's son, E. B. Clapp.
<b>W. Stockbridge</b> (Apr)	Stockbridge Marble Co. sold to J. L. Snyder who continued.
(Jun)	West Stockbridge Lime Co. sold to New England Lime Co.
<b>Weymouth</b> (Mar)	Champion Vending Machine Co. bought idle Clapp factory.
<b>Whitman</b> (Jan)	Jenkins Bros. & Co., leather board and steel shanks, sold to American Shoe Finding Co. David A. Gurney & Co., steel shanks, sold to Union Shank Co. and American Shoe Finding Co.
(Mar)	Holbrook & Keene's shoe factory bought by E. Bridgewater Savings Bank. Jas. Fitzgibbons, heels, discontinued.
<b>Winchendon</b> (Jul)	Baxter D. Whitney, machinery, W. M. Whitney admitted; name changed to B. D. Whitney & Son.
<b>Woburn</b> (Dec)	Woburn Heel Co. dissolved.
(Jan)	Jas. H. Carr succeeded by Woburn Japanning Co.
<b>Worcester</b> (Dec)	Davis & Buxton Stamping Co. increased capital stock \$5,000.
(Jan)	E. W. Coffin, shoe cases, closed indefinitely; (May) plant destroyed by fire and no manufacturing done in 1902. Louis W. Rawson, cotton machinery, discontinued.
(Mar)	Brownell & Elliott, heels, dissolved. Parker Hat Factory sold to Frank C. Smith. W. H. Eddy & Co., machinery, absorbed by N. A. Lombard Co.
(Apr)	Junction Foundry Co. discontinued.
(May)	Clarendon Counter Co. sold machinery at auction. Worcester Thread Co. sold to Linen Thread Co. of America.
(Jun)	Loring Coes & Co. bought controlling interest in Coes Wrench Co., consolidated, and increased joint capital stock to \$150,000. L. W. Pond Machine & Foundry Co. absorbed foundry business of Caleb Colvin and L. W. Pond Machine Co. and reorganized under laws of Maine. Natural Food Co. discontinued manufacturing in Mass.
(Jul)	J. J. Warren Co., leather goods, sold to Warren Leather Goods Co.
<b>Wrentham</b> (Nov)	Chapman & Barden, jewelry, moved to Attleborough. Wrentham Shuttle Co. absorbed by U. S. Spool & Bobbin Co.; local plant shut down.

From the preceding table, it will be noted that there were 84 instances of changes in firms during the year ending September 30, 1902, as reported to this Department. These changes consisted in the retirement of certain members, the admission of new members, the dissolution of firms and subsequent reorganization, and other changes, as indicated, effected in

the following industries: Artisans' Tools, 3; Awnings, Sails, Tents, etc., 1; Boots and Shoes, 38; Boxes (Paper), 4; Building Materials, 1; Carriages and Wagons, 2; Clothing, 2; Cotton Goods, 3; Electrical Apparatus and Appliances, 1; Electroplating, 1; Food Preparations, 4; Leather, 3; Machines and Machinery, 4; Metals and Metallic Goods, 3; Models, Lasts, and Patterns, 2; Paper, 1; Polishes and Dressing, 3; Stone, 4; Whips, Lashes, and Stocks, 1; Woollen Goods, 2; and Worsted Goods, 1.

There were ten instances of the consolidation of firms or corporations, occurring as follows: Artisans' Tools, 1; Boots and Shoes, 2; Food Preparations, 1; Machines and Machinery, 3; Metals and Metallic Goods, 1; and Paper, 2.

There were 119 instances of the sale of plants, in whole or in part, recorded in the following industries: Agricultural Implements, 3; Artisans' Tools, 4; Bicycles, Tricycles, etc., 1; Boots and Shoes, 28; Boxes, Barrels, Kegs, etc., 2; Boxes (Paper), 1; Brooms, Brushes, and Mops, 2; Clothing, 2; Cordage and Twine, 1; Cotton Goods, 8; Drugs and Medicines, 2; Electrical Apparatus and Appliances, 2; Food Preparations, 5; Furniture, 1; Hosiery and Knit Goods, 3; Leather Goods, 2; Lumber, 1; Machines and Machinery, 12; Metals and Metallic Goods, 9; Musical Instruments and Materials, 1; Paper, 2; Polishes and Dressing, 3; Printing, Publishing, and Bookbinding, 1; Saddlery and Harness, 1; Silk and Silk Goods, 1; Stone, 3; Straw and Palm Leaf Goods, 1; Whips, Lashes, and Stocks, 1; Wooden Goods, 2; Woollen Goods, 13; and Worsted Goods, 1.

In addition to the above sales, there were 21 instances of the sale of plants in whole or in part, to industrial combinations. They include the following industries: Artisans' Tools, 1; Boots and Shoes, 2; Buttons and Dress Trimmings, 3; Cement, Kaolin, Lime, and Plaster, 2; Flax, Hemp, and Jute Goods, 1; Food Preparations, 4; Machines and Machinery, 4; Metals and Metallic Goods, 1; Models, Lasts, and Patterns, 1; Paper, 1; and Paper Goods, 1.

Seven establishments moved from other States into Massachusetts, 4 being Boot and Shoe firms, one Machines and Machinery, and 2 engaged in the manufacture of Woollen Goods. Eleven establishments moved out of Massachusetts into other

States, classified by industries, as follows : Artisans' Tools, 1 ; Boots and Shoes, 2 ; Carriages and Wagons, 1 ; Clothing, 1 ; Cotton Goods, 1 ; Leather, 1 ; Leather Goods, 1 ; Metals and Metallic Goods, 1 ; Paper, 1 ; and Rubber and Elastic Goods, 1.

There were 25 instances noted of removals from one town to another within the Commonwealth, distributed by industries as follows : Boots and Shoes, 12 ; Brooms, Brushes, and Mops, 1 ; Burial Cases, Caskets, Coffins, etc., 1 ; Buttons and Dress Trimmings, 1 ; Clothing, 1 ; Cotton Goods, 3 ; Electrical Apparatus and Appliances, 1 ; Food Preparations, 1 ; Ivory, Bone, Shell, and Horn Goods, etc., 1 ; Jewelry, 1 ; and Metals and Metallic Goods, 2.

There were 61 instances of permanent shutdowns where the firm or corporation discontinued business. They occurred in the following industries : Awnings, Sails, Tents, etc., 1 ; Boots and Shoes, 30 ; Brooms, Brushes, and Mops, 1 ; Building Materials, 1 ; Clothing, 3 ; Cotton Goods, 2 ; Electrical Apparatus and Appliances, 1 ; Fancy Articles, 1 ; Food Preparations, 4 ; Furniture, 1 ; Glue, Isinglass, and Starch, 1 ; Hosiery and Knit Goods, 1 ; Leather, 1 ; Liquors (Bottled) and Carbonated Beverages, 1 ; Machines and Machinery, 3 ; Metals and Metallic Goods, 3 ; Paints, Colors, and Crude Chemicals, 1 ; Polishes and Dressing, 1 ; Rubber and Elastic Goods, 1 ; Scientific Instruments and Appliances, 1 ; Shipbuilding, 1 ; and Wooden Goods, 1.

The aggregate amount of capital stock added by increases, as reported in 27 instances in the preceding table, was \$5,415,000, distributed throughout the following industries : Artisans' Tools, \$15,000 ; Boots and Shoes, \$550,000 ; Carriages and Wagons, \$120,000 ; Cordage and Twine, \$500,000 ; Cotton Goods, \$1,950,000 ; Electrical Apparatus and Appliances, \$1,000,000 ; Emery and Sand Paper and Cloth, etc., \$184,000 ; Food Preparations, \$6,000 ; Furniture, \$10,000 ; Leather, \$110,000 ; Machines and Machinery, \$150,000 ; Metals and Metallic Goods, \$105,000 ; Paints, Colors, and Crude Chemicals, \$15,000 ; Paper, \$50,000 ; Print Works, Dye Works, and Bleacheries, \$100,000 ; Rubber and Elastic Goods, \$50,000 ; and Worsted Goods, \$500,000. There were three instances of reduction in the amount of capital stock reported, aggregating \$390,000, and distributed industrially as follows : Boots



and Shoes, \$63,000; Print Works, Dye Works, and Bleacheries, \$300,000; and Rubber and Elastic Goods, \$27,000.

Considering the item of capital stock as shown in the preceding presentations, we find that new stock in new corporations was added to the amount of \$18,338,200; in those corporations which changed their form of management, \$7,441,300; in those corporations which were reorganized, \$18,445,000, and in those corporations which increased their capitalization, \$5,415,000, an aggregate of \$49,639,500. Deducting the \$390,000 representing the total reduction made in capital stock, we have a net increase in the amount of authorized capital in manufacturing and mechanical industries of \$49,249,500. Not all of this was paid in, however, as the laws of several States permit the organization of corporations with large capital authorization but without requiring the payment of the whole or even of part of the capital stock.

### **New Buildings Constructed, New Machinery Added, and Other Additions to Plants.**

In the following presentation are shown, by cities, towns, and months, the material additions which have been made to existing plants, such as new machinery, boilers, engines, new classes of product, as well as new buildings begun or completed during the year. The method of reading this table is as follows: In Abington, M. N. Arnold & Co., manufacturers of shoes, began or completed the construction of a new storehouse, 100 x 40 feet. In the town of Adams, in the month of October, the Renfrew Manufacturing Co., cotton goods, began or completed the construction of a new wooden storehouse, 100 x 40 feet; in December, this same company added new machinery; and in May, new boilers and other machinery were added. Other lines may be read in a similar manner.

#### *New Buildings Constructed, New Machinery Added, and Other Additions to Plants.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, NEW BUILDINGS BEGUN OR COMPLETED DURING THE YEAR, NEW MACHINERY, NEW PRODUCT, ETC.
Abington (May)	M. N. Arnold & Co., shoes, storehouse, 100 x 40 ft.
Adams (Oct)	Berkshire Cotton M'f'g Co., machinery; (May) looms. Graham, Clark, & Co., woollens, machinery. Renfrew M'f'g Co., wooden storehouse, 100 x 40 ft.; (Dec) machinery; (May) boilers and machinery. W. C. Plunkett & Son, cottons, machinery.

*New Buildings Constructed, New Machinery Added, and Other Additions to Plants — Continued.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, NEW BUILDINGS BEGUN OR COMPLETED DURING THE YEAR, NEW MACHINERY, NEW PRODUCT, ETC.
<b>Adams</b> (Mar) .	L. L. Brown Paper Co., machinery.
<b>Agawam</b> (Dec) .	Agawam Co., woollens, machinery, boilers, and an additional story.
<b>Amesbury</b> (Dec) .	Hamilton Woollen Co., machinery.
<b>Ashburnham</b> (Sep).	Ashburnham Sheeting Co., engine.
<b>Athol</b> (Oct) .	L. S. Starrett Co., tools, machine shop and office, 50 x 162 ft., 4 stories; graduating dept., 160 x 49 ft., 3½ stories.
(Dec) .	Diamond Match Co., engine.
(May) .	Millers River M'fg Co., woollens, 3 story addition to mill, 73 ft. long.
<b>Attleborough</b> (May)	Hebron Mills, cottons, combs and winders.
(Jul)	James Orr, dyehouse and power plant.
<b>Auburn</b> (Jul) .	Hogg Carpet Co., machinery.
<b>Bellingham</b> (Feb) .	Taft, Murdock, & Co., woollens, looms and other machinery.
<b>Beverly</b> (Sep) .	Upton Machine Co., machinery.
<b>Blandford</b> (Oct) .	Chas. M. Waite, cardboard, etc., penstock and bulkhead.
<b>Boston</b> (Oct) .	Angier Chemical Co., 4 story factory, 50 x 125 ft.
(Feb) .	Vose & Son, pianos, 6 story factory, 300 x 60 ft.
(Jul) .	C. L. Bengier, engineering instruments, 3 story brick factory, 40 x 100 ft.
<b>Brockton</b> (Oct) .	W. L. Douglas Shoe Co., dynamo; (Nov) addition to factory.
(Nov) .	Hub Gore Makers, 2 story brick addition.
	Myron F. Thomas, shoes, boiler.
(Apr) .	Brockton Co-operative Shoe Co., 4 story addition, 25 x 50 ft.
	Brockton Sole Pattern Co., machinery.
	Dunbar Pattern Co., pattern shop.
	Empire Shoe Co., machinery.
	R. B. Grover & Co., shoes, electric motors.
<b>Cambridge</b> (Apr) .	J. S. Bell Confectionery Co., 4 story brick factory.
(Sep) .	Simplex Electric Co., 3 story brick factory, 100 x 200 ft.
	W. L. Lockhart & Co., caskets, etc., 4 story brick factory, 200 x 60 ft.
<b>Charlton</b> (Jun) .	Chauncy W. Pike, satinets, addition; (Nov) electric lights.
(Jul) .	Akers & Taylor, woollens, machinery.
<b>Chelmsford</b> (Nov) .	Geo. C. Moore, worsteds, 3 story brick addition, 200 x 80 ft.; (May) machinery.
(Jan) .	Success Worsted Co., washer; (Mar) looms.
(Aug) .	No. Chelmsford Supply Co., machinery.
<b>Chelsea</b> (Apr) .	Maine Furniture Co., factory, 200 x 60 ft. with ell, 60 x 53 ft.
	W. T. Cardy & Sons Co., paper boxes, addition.
(May) .	Atwood & McManus, paper boxes, 2 story wooden addition, 72 x 78 ft.
<b>Chester</b> (Aug) .	Hudson & Chester Co., store sheds.
<b>Chicopee</b> (Dec) .	J. Stevens Arms & Tool Co., machinery.
(Mar) .	Chicopee M'fg Co., cottons, rope transmission system.
(May) .	Lamb Knitting Machine Co., 3 story brick factory, 120 x 40 ft.
(Jul) .	Fisk Rubber Co., addition, 50 ft. long.
<b>Clarksburg</b> (Aug) .	Strong, Hewat, & Co., woollens, 4 story extension, 12 x 30 ft.; 4 story extension, 50 x 180 ft.; 2 story storage, 60 x 60 ft.
<b>Clinton</b> (Apr) .	Bigelow Carpet Co., power house.
<b>Colrain</b> (Jul) .	Griswoldville M'fg Co., cottons, addition to bleachery and machinery.
<b>Conway</b> (Nov) .	De Wolfe & Hassell, shoes, addition, 24 x 36 ft.

*New Buildings Constructed, New Machinery Added, and Other Additions to Plants — Continued.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, NEW BUILDINGS BEGUN OR COMPLETED DURING THE YEAR, NEW MACHINERY, NEW PRODUCT, ETC.
<b>Dalton</b> (Oct) . .	Crane & Co., paper, addition Government Mills; (Mar) addition Pioneer Mill.
(Jul) . .	Byron Weston Paper Co., pulp beaters; (Sep) storehouse.
<b>Dana</b> (Oct) . .	H. W. Goodman Co., straw hats, storehouse, 30 x 80 ft.
<b>Dedham</b> (Apr) . .	Merchants Woollen Co., looms.
<b>Draeut</b> (Aug) . .	Collinsville Mill, woollens, looms.
<b>E. Bridgewater</b> (Apr)	Carver Cotton Gin Co., 2½ story addition, 60 x 60 ft.
	(Aug) Old Colony Foundry Co., engine room, 40 x 80 ft.
<b>Easthampton</b> (Oct).	West Boylston M'f'g. Co., cottons, 3 story brick addition, 70 x 160 ft.
<b>Enfield</b> (Jan) . .	Enfield M'f'g Co., woollens, dyehouse.
(Sep) . .	Swift River Co., woollens, electric lighting.
<b>Erving</b> (Aug) . .	Millers Falls Paper Co., bleach house, 42 x 63 ft.; stock house, 82 x 42 ft.; finishing room, 50 x 112 ft.; engine room, 68 x 128 ft.; boiler house, 45 x 45 ft.; machine room, 50 x 126 ft.
<b>Everett</b> (Jan) . .	Andrews & Co., shoes, 3 story addition, 40 x 60 ft.
(Jun) . .	U. S. Steel Co., office, machine shop. and power house.
(Sep) . .	New England Trunk Co., 4 story wooden factory, 132 x 88 ft.
<b>Fairhaven</b> (Apr)	Atlas Tack Co. started first machine in new factory.
<b>Fall River</b> (Oct)	Barnaby M'f'g Co., gingham, machinery; (Jun) machinery; (Aug) engine and boiler.
	Granite Mills, engine house for No. 2 mill; (May) machinery.
	Osborn Mills, machinery; (Nov) machinery.
	Richard Borden M'f'g Co., weave shed, 141 x 102 ft.; picker house, 95 x 48 ft.; (Feb) spinning frames substituted; (May) machinery; (Jun) machinery; (Jul) machinery.
(Nov) . .	Pocasset M'f'g Co., water wheel.
(Jan) . .	Chace Mills, machinery; (Feb) machinery; (Jun) boiler; (Aug) engine and machinery.
	Stevens M'f'g Co., fancy quilts, 2 story addition; machinery; (May) electric power plant; machinery.
(Feb) . .	Sanford Spinning Mill, addition, 200 x 32 ft.
(Mar) . .	Goss Bros., reeds, factory.
	Robeson Mills, machinery.
(Apr) . .	Fall River Iron Works Co., cottons, mill to contain 84,000 spindles.
(May) . .	American Printing Co., machinery; (Jun) addition for storage and packing; (Aug) machinery; engine.
	Davis Mills, fine cottons, mill to contain 50,000 spindles.
	Durfee Mills, machinery.
	Kilburn, Lincoln, & Co., iron work, machinery; cupola.
	Mechanics Mills, machinery.
(Jun) . .	Mechanics Foundry & Machine Co., 2 brick additions, 50 x 50 and 30 x 40 ft.
	Sagamore Mills, machinery; (Jul) spinning frames substituted.
	Tecumseh Mills, machinery.
(Jul) . .	Barnard M'f'g Co., spinning frames substituted.
	Flint Mills, spinning frames substituted.
	Hargraves Mills, machinery.
	Stafford Mills, spinning frames substituted.
(Aug) . .	Heywood Narrow Fabric Co. rebuilt burned plant, 2 story, 80 x 50 ft., wood.

*New Buildings Constructed, New Machinery Added, and Other Additions to Plants — Continued.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, NEW BUILDINGS BEGUN OR COMPLETED DURING THE YEAR, NEW MACHINERY, NEW PRODUCT, ETC.
<b>Fall River</b> (Aug)	. Kerr Thread Mill, engine.
(Sep)	. J. H. Estes & Son, twine, 1 story stone factory, 60 x 120 ft.
<b>Fitchburg</b> (Nov)	. Orswell Mills, cottons, addition; (Mar) engine.
(Apr)	. Star Worsted Co., machinery.
<b>Framingham</b> (May)	. Dennison M'f'g Co., tags, etc., 4 story brick addition, 400 x 50 ft.
<b>Franklin</b> (Jul)	. Singleton Worsted Co., dyehouse.
(Aug)	. Norfolk Woollen Co., 2 brick additions, 60 x 72 ft. and 60 x 50 ft.; machinery.
(Sep)	. American Woollen Co., looms.
<b>Gardner</b> (Nov)	. Heywood Bros. & Wakefield Co., rattan ware, weave room.
(Mar)	. John A. Dunn Co., chairs, rebuilt burned plant.
(May)	. General Foundry Co., foundry.
<b>Grafton</b> (Apr)	. Saunders Cotton Mill, looms.
(Jul)	. Farnumsville Cotton Mills, machinery.
<b>Granville</b> (Oct)	. Holcomb Bros., cider mill.
<b>Gt. Barrington</b> (Jul)	. B. D. Rising Paper Co., engine; (Aug) storehouse, 44 x 144 ft. Stanley Instrument Co., addition.
<b>Greenfield</b> (Nov)	. Wiley & Russell M'f'g Co., machines and tools, boiler.
(Apr)	. Wells Bros. Co., machines and tools, addition, 125 x 40 ft.
(Jun)	. Automatic Machine Co., factory.
(Jul)	. F. E. Wells & Son, metal goods, storeroom, 30 x 40 ft.
<b>Groveland</b> (Dec)	. Groveland Mills, woollens, 2 story addition, 52 x 62 ft.
<b>Hardwick</b> (Mar)	. Geo. H. Gilbert M'f'g Co., dress goods, machinery and addition; (Nov) electric lights.
<b>Haverhill</b> (Oct)	. M. T. Stevens & Sons, woollens, addition, 37 x 40 ft.
(Dec)	. F. M. Hodgdon, shoes, machinery.
(Jun)	. Haverhill Boxboard Co., factory.
(Aug)	. Bradford Hat Co., machinery.
<b>Holden</b> (Feb)	. Jefferson M'f'g Co., woollens, machinery. Dawson M'f'g Co., woollens, electric power system.
<b>Holliston</b> (Apr)	. Chas. A. Dawson & Son, woollens, brick addition, 30 x 40 ft.
<b>Holyoke</b> (Oct)	. Farr Alpaca Co., addition, machinery, and electric power system.
(Dec)	. Kennedy & Sullivan M'f'g Co., brass foundry addition 25 feet long; storehouse, 32 x 40 ft.; pipe storage room, 32 x 100 ft. Parsons Paper Co., filtering plant.
(Jan)	. Conn. Valley Lumber Co., machinery.
(Feb)	. Wm. Skinner M'f'g Co., silks, looms.
(Mar)	. Beebe, Webber, & Co., woollens, machinery. Lyman Mills, cottons, machinery; (May) spinning frames substituted.
(May)	. Germania Mills, woollens, 3 story brick addition, 40 x 100 ft.; (Jul) water wheel.
(Jul)	. Holyoke Paper Co., water wheel. Valley Paper Co., finishing room addition.
<b>Hyde Park</b> (Jul)	. American Radiator Co., 5 story brick storehouse, 250 x 100 ft.
<b>Lancaster</b> (Nov)	. Lancaster M'f'g Co., cottons, machinery.
<b>Lawrence</b> (Jan)	. Geo. E. Kunhardt, woollens, looms and dressers. Walworth Bros., worsteds, looms.
(Mar)	. Champion International Co., paper, factory.
(May)	. E. Frank Lewis, wool scouring, 2 story addition; 2 boilers.
(Jun)	. Pacific Mills, cottons and woollens, storehouse.
(Aug)	. Everett Mills, cottons, storehouse.

*New Buildings Constructed, New Machinery Added, and Other Additions to Plants — Continued.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, NEW BUILDINGS BEGUN OR COMPLETED DURING THE YEAR, NEW MACHINERY, NEW PRODUCT, ETC.
<b>Leicester</b> (Nov)	. Howarth & Sons, woollens, water wheel.
(May)	. E. G. Carlton & Sons, woollens, brick storehouse; (Aug) machinery.
<b>Leominster</b> (Dec)	. Tenney & Porter, horn goods, rebuilt burned plant.
(Apr)	. U. S. Thread Co., 4 story factory, 45 x 132 ft.
(Sep)	. E. B. Kingman & Co., horn goods, 3 story factory, 38 x 140 ft. Richardson Piano Case Co., 4 story addition, 38 x 140 ft.
<b>Lowell</b> (Nov)	. Bigelow Carpet Co., machinery; (Mar) machinery; (Aug) new mill.
(Dec)	. American Woollen Co., addition to Bay State Mill. Middlesex Mills, woollens, machinery. Park Worsted Mills, machinery.
(Feb)	. Walsh Worsted Mills, machinery.
(Mar)	. Jos. Harriman, elastic webbing, rebuilt burned plant.
(Jun)	. Lowell Machine Shop, 3 story brick factory, 280 x 94 ft. Massachusetts Mohair Plush Co., mill.
(Jul)	. Scannell & Wholey, storehouse.
(Aug)	. Lowell Hosiery Co., dyehouse, 50 x 80 ft.; machinery.
(Sep)	. Merrimack M'f'g Co., cottons, looms.
<b>Lynn</b> (Jan)	. Illinois Leather Co. rebuilt burned plant.
(Mar)	. Allen Hay, boats, factory, 20 x 30 ft.
(Apr)	. General Electric Co., brick gas house, 25 x 26 ft.
(May)	. Lockwood Cutlery Co., factory, 60 x 180 ft.
<b>Marblehead</b> (Jul)	. Jas. Sullivan, glue factory, addition.
<b>Marlborough</b> (Oct)	. T. J. Beaudry, dies, factory.
(Jun)	. Rice & Hutchins, shoes, factory; (Aug) added manufacture of paper boxes.
<b>Maynard</b> (May)	. American Woollen Co., additional story.
<b>Medford</b> (Mar)	. Wellman Sole-Cutting Machine Co., machinery.
<b>Medway</b> (Jan)	. Cole, Senior, & Co., woollens, looms.
<b>Methuen</b> (Jan)	. Methuen Co., cottons, machinery.
(Sep)	. Methuen Yarn Co., office and addition.
<b>Middleborough</b> (Jul)	. C. W. Maxim, sawmill, added manufacture of automobiles.
<b>Milford</b> (Nov)	. Wm. Lapworth & Sons, woollens, machinery; (Jan) weave room.
(Apr)	. Huckins, Temple, & Wood, new class of shoes.
<b>Millbury</b> (Dec)	. Mayo Woollen Co., machinery.
(Mar)	. Cordis Mills, woollens, looms. Windle Bros., wool scouring, machinery.
(Apr)	. Holbrook M'f'g Co., linens, addition; (Jun) machinery.
(Jul)	. Bowden Felting Mills, machinery. H. W. Hakes M'f'g Co., machines, etc., 2 story wood-finishing room, 45 x 144 ft.
<b>Mills</b> (Feb)	. National Flax Fibre Co., machinery.
(Apr)	. American Felt Co., addition, 112 x 20 ft.
<b>Monroe</b> (Jun)	. Stafford & Whitcomb rebuilt burned grist mill.
<b>Monson</b> (Nov)	. D. W. Ellis & Son, woollens, boilers.
(Mar)	. Heritage & Hirst, woollens, machinery.
(Aug)	. H. D. Moulton rebuilt box factory.
<b>Montague</b> (Oct)	. Esleek Paper Mill, addition.
(Jul)	. Turners Falls Cotton Mill, water wheel.
<b>Needham</b> (May)	. W. M. Carter & Co., knit goods, machinery.
(Sep)	. Geo. E. Wye & Co., knit goods, machinery.

*New Buildings Constructed, New Machinery Added, and Other Additions to Plants — Continued.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, NEW BUILDINGS BEGUN OR COMPLETED DURING THE YEAR, NEW MACHINERY, NEW PRODUCT, ETC.
<b>New Bedford</b> (Oct) .	Dartmouth M'f'g Co., cottons, mill 805 x 198 ft.; (Mar) card room equipment.
(Jan) .	Whitman Mills, cottons, 3 story mill.
(Mar) .	Soule Mills, cottons, plant started for first time 21st.
(Apr) .	Butler Mills, cottons, 3 story spinning mill, 225 x 70 ft.; weave shed, 195 x 90 ft.; cotton house, 55 x 160 ft.
(May) .	Onoko Mills, cottons, machinery.
(Jun) .	City M'f'g Co., cottons, machinery. J. C. Rhodes & Co., metal goods, 4 story brick factory, 62 x 109 ft. Pairpoint Corporation, silver and glassware, 2 story brick factory, 62 x 75 ft. Potomska Mills, cottons, machinery.
(Jul) .	Howland Mills, cottons, 1 story addition, 179 x 290 ft.
<b>Newbury</b> (Jan) .	Byfield Woollen Co., boiler.
<b>Newton</b> (May) .	John R. Robertson, boat factory.
(Aug) .	W. S. Cordingly & Son, shoddy, 2 story brick addition, 86 x 26 ft.
<b>No. Adams</b> (Dec) .	Greylock Mills, cottons, machinery.
(Feb) .	Arnold Print Works, 2 printing machines; (Jun) weave shed 248½ x 402.8 ft.
(Apr) .	Williamstown M'f'g Co., cottons, head gate and dam.
<b>Northampton</b> (Jan) .	Florence M'f'g Co., brushes, two 2 story buildings, 60 x 31 and 80 x 60 ft.
(Sep) .	Northampton Paper Box Co., 3 story addition, 80 x 40 ft.
<b>No. Andover</b> (Jan) .	Davis & Furber Machine Co., 4 story addition, 25 x 70 ft. M. T. Stevens & Sons, woollens, machinery.
<b>Northborough</b> (May) .	Northboro Woollen Mills, engine.
<b>Orange</b> (Apr) .	New Home Sewing Machine Co., needle plant.
<b>Oxford</b> (Nov) .	Thayer Woollen Co., finishing room; (Jul) 2 sets cards. John S. Rich, shoddy mill.
(Aug) .	A. Howarth & Son, woollens, fulling machine.
<b>Palmer</b> (Mar) .	Boston Duck Co., stock house, 200 x 50 ft. Thorndike Co., cottons, spinning frames.
(Jul) .	Otis Co., cottons, machinery.
(Aug) .	Wright & Colton Wire Cloth Co., addition; manufacture of Fourdrinier wire added.
<b>Peabody</b> (Nov) .	C. F. Buckley, smelting furnace and kettles.
(Jan) .	A. C. Lawrence Leather Co., 1 story brick factory, 50 x 140 ft.; (May) storehouse.
(Mar) .	John Dummer, leather, 2 story addition, 30 x 40 ft.
(Aug) .	J. E. Osborn & Co., morocco, rebuilt burned plant.
(Sep) .	J. B. Thomas, wool clips, 5 story brick factory, 185 x 50 ft.; brick boiler house, 40 x 40 ft.
<b>Pittsfield</b> (Oct) .	Stanley Electric M'f'g Co., machinery.
(Dec) .	Eagle Co., newspaper, stereotyping plant. Tillotson M'f'g Co., worsteds, looms.
(Jan) .	F. W. Hubbell, 3 story brass foundry, 51 x 34 ft.
(Feb) .	A. H. Rice & Co., silks, machinery.
(Mar) .	D. M. Collins Co., knit goods, paper box machinery. Pontoosuc Mills, woollens, twisters; (Sep) dyehouse, 96 x 64 ft.
(Apr) .	Eaton-Hurlbut Co., paper, machinery; (Jun) 3 story addition, 35 x 60 ft.
(Jun) .	S. N. & C. Russell M'f'g Co., machinery.

*New Buildings Constructed, New Machinery Added, and Other Additions to Plants — Continued.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, NEW BUILDINGS BEGUN OR COMPLETED DURING THE YEAR, NEW MACHINERY, NEW PRODUCT, ETC.
<b>Pittsfield</b> (Jul)	J. L. & T. D. Peck M'f'g Co., manufacture of finishing thread added; 2 story mill, 64 x 42 ft.
(Aug)	Taconic Mill, woollens, 2 story dyehouse, 30 x 50 ft.
<b>Plymouth</b> (Nov)	Puritan Mills, worsteds, dyehouse, 20 x 30 ft.; (Dec) looms; (Jan) burling and sewing room.
<b>Rockland</b> (Dec)	John Burdett & Son, heels, 2 story factory, 90 x 25 ft.
(Aug)	John Spence & Co., leather bleachers, rebuilt burned naphtha shop.
<b>Rowley</b> (Feb)	W. C. Foster's Sons, shoes, addition.
<b>Rutland</b> (Oct)	Moulton Bros., satinets, addition.
<b>Salem</b> (Dec)	Patrick D. Eagan, 3 story addition.
(Mar)	Salem Shoe Stock Co. added manufacture of morocco.
(Apr)	Salem Rubber Cement Co., boiler.
(May)	Am. Hide & Leather Co. added manufacture of shoe stock.
<b>Shelburne</b> (May)	H. H. Mayhew Co., tools, store and tempering room, 30 x 70 ft.
<b>Somerville</b> (Jan)	M. W. Carr & Co., jewelry, 2 story brick factory, 135 x 30 ft.
<b>Southbridge</b> (Mar)	Am. Optical Co., addition; (Jul) machinery.
(Aug)	Hamilton Woollen Co., machinery.
<b>Spencer</b> (Feb)	Isaac Prouty & Co., shoes, stitching machines; (Aug) added manufacture of counters.
	Allen L. Taft & Co., woollens, rope power transmission system; machinery.
(Aug)	Spencer Wire Co., 1 story brick annealing shop, 108 x 30 ft.
(Sep)	E. Jones & Co., shoes, boiler.
<b>Springfield</b> (Jan)	U. S. Spring Bed Co., addition.
(Feb)	Bemis & Call Hardware & Tool Co., 4 story addition, 140 x 61 ft.
	Springfield Rendering Co., brick addition for slaughtering.
(Mar)	F. M. West Box Co. rebuilt burned plant.
	Hampden Corundum Wheel Co. rebuilt burned plant.
	Rhode Island Worsteds Co., dyehouse; (Jul) machinery.
(May)	Smith & Wesson, 4 story factory, 34 x 200 ft.
(Jul)	Bausch Machine Tool Co., brick addition to foundry, 65 x 30 x 18 ft.
	Ornamental Woodworking Co., 3 story brick factory, 30 x 58 ft.
<b>Stoughton</b> (Oct)	Stoughton Rubber Co., 2 story brick addition, 80 x 30 ft., and 2 story wood addition, 75 x 35 ft.; added manufacture of golf balls.
<b>Stow</b> (Mar)	A. D. Gleason, woollens, machinery.
<b>Sturbridge</b> (Sep)	Snell M'f'g Co., tools, addition, 30 x 40 ft.
<b>Sutton</b> (Jun)	Dudley Shuttle Co. added manufacture of edge tools.
	Manchaug Mills, cottons, machinery.
<b>Taunton</b> (Mar)	Taunton Locomotive M'f'g Co., foundry, 185 x 45 ft.
	Whittenton M'f'g Co., cottons, 2 story addition.
(Apr)	O. G. Thomas, foundry, addition.
(May)	Canoe River Mills, cottons, machinery.
(Jun)	Huber-Hodgman Printing Press Co., factory, 75 x 600 ft.
	Nemasket Mills, cottons, machinery.
<b>Templeton</b> (Oct)	Geo. W. Travers, carriages, addition, 40 x 70 ft.
<b>Uxbridge</b> (Jul)	Mumford River Tape Co., machinery.
<b>Waltham</b> (Apr)	Boston M'f'g Co., cottons, machinery.
(Aug)	Am. Waltham Watch Co., 70 ft. addition.
	G. W. Bond Co., aluminium goods, factory.
<b>Wareham</b> (Oct)	Tremont Nail Co., dam.

*New Buildings Constructed, New Machinery Added, and Other Additions to Plants — Concluded.*

CITIES, TOWNS, AND MONTHS.	FIRMS, CORPORATIONS, NEW BUILDINGS BEGUN OR COMPLETED DURING THE YEAR, NEW MACHINERY, NEW PRODUCT, ETC.
<b>Warren</b> (Oct) . .	Warren Cotton Mills, storehouse; (Feb) 24-ft. dyehouse; (Aug) looms and spinning frames; (Sep) boilers; machinery.
(Jan) . .	Bradford Yarn Mills, electric motive power.
(Jul) . .	Warren Steam Pump Co., factory, 85 x 140 ft.
<b>Webster</b> (Mar) . .	Chase Mills, woollens, 2 dressers.
<b>Westborough</b> (Jul)	Westboro Weaving Co., 2 story brick weave room, 50 x 262 ft.; 1 story boiler room, 36 x 140 ft.
<b>W. Springfield</b> (Oct)	Mittineague Paper Co., electric motive power.
(Dec)	Agawam Paper Co., 2 story size room, 25 x 30 ft.; (Mar) filtering plant.
<b>Wilbraham</b> (May) .	Collins M'f'g Co., paper, mill.
<b>Winchendon</b> (Apr) .	Baxter D. Whitney, machinery, machine shop addition, 40 x 66 ft.
<b>Woburn</b> (Dec) . .	Merrimac Chemical Co. rebuilt burned plant.
(Aug) . .	Beggs & Cobb, addition to tannery.
<b>Worcester</b> (Oct) . .	E. D. Thayer, Jr., woollens, rotary press.
(Nov) . .	Norton Emery Wheel Co., factory, 75 x 82 ft.
(Jan) . .	Edgeworth Mills, 3 sets of cards.
	Star Waist & Petticoat Co., 15 sewing machines.
(Feb) . .	Queensbury Mills, worsteds, machinery.
(Mar) . .	Morgan Spring Co., 1 story addition, 90 x 100 ft.
	Standard Foundry Co., brick foundry.
(Apr) . .	Francis Reed Co., 1 story machine shop, 40 x 125 ft.
	Norton Grinding Co., 2 story machine shop, 83 x 144 ft.
	Spencer Wire Co., brick addition, 70 x 30 ft.
(May) . .	Elliott & Hall added manufacture of machine tools.
	M. J. Whittall, carpets, enlargement.
(Aug) . .	Am. Steel & Wire Co., storehouse, 87 x 40 ft.
	National M'f'g Co., 2 story storehouse, 27 x 127 ft.

There were 162 instances of the construction of new buildings reported during the year ending September 30, 1902, occurring in the following industries: Arms and Ammunition, 1; Artisans' Tools, 6; Boots and Shoes, 6; Boxes, Barrels, Kegs, etc., 3; Boxes (Paper), 2; Brooms, Brushes, and Mops, 2; Burial Cases, Caskets, Coffins, etc., 1; Carpetings, 3; Carriages and Wagons, 1; Cooking, Lighting, and Heating Apparatus, 1; Cordage and Twine, 1; Cotton Goods, 23; Drugs and Medicines, 1; Electrical Apparatus and Appliances, 2; Flax, Hemp, and Jute Goods, 1; Food Preparations, 1; Furniture, 3; Glue, Isinglass, and Starch, 1; Hosiery and Knit Goods, 1; Ivory, Bone, Shell, and Horn Goods, etc., 1; Jewelry, 1; Leather, 5; Liquors (Bottled) and Carbonated Beverages, 1; Machines and Machinery, 18; Metals and Metallic Goods, 18; Models, Lasts, and Patterns, 1; Musical



Instruments and Materials, 2; Paper, 9; Paper Goods, 1; Print Works, Dye Works, and Bleacheries, 2; Rubber and Elastic Goods, 3; Scientific Instruments and Appliances, 3; Shipbuilding, 2; Stone, 1; Straw and Palm Leaf Goods, 1; Tallow, Candles, Soap, and Grease, 1; Trunks and Valises, 1; Wooden Goods, 1; Woollen Goods, 25; and Worsted Goods, 5.

There were 132 instances of the addition of new equipment or of new machinery to replace old, distributed throughout the following industries: Boots and Shoes, 3; Carpetings, 3; Clothing, 2; Cotton Goods, 59; Electrical Apparatus and Appliances, 1; Flax, Hemp, and Jute Goods, 2; Hosiery and Knit Goods, 3; Lumber, 1; Machines and Machinery, 5; Models, Lasts, and Patterns, 1; Paper, 3; Print Works, Dye Works, and Bleacheries, 3; Rubber and Elastic Goods, 1; Scientific Instruments and Appliances, 1; Silk and Silk Goods, 2; Woollen Goods, 31; and Worsted Goods, 11.

There were 9 instances where a new class of product was added, 3 occurring in Boots and Shoes, and one each in Arms and Ammunition, Cotton Goods, Leather, Lumber, Machines and Machinery, and Metals and Metallic Goods.

Ten establishments added electric plants either for transmission of power or for lighting, in the following industries: Boots and Shoes, 2; Cotton Goods, 1; Paper, 1; Woollen Goods, 5; and Worsted Goods, 1.

In 38 instances other additions were made to plants, such as new engines, boilers, penstocks, dams, etc., distributed as follows: Artisans' Tools, 1; Boots and Shoes, 2; Clocks and Watches, 1; Clothing, 1; Cotton Goods, 10; Machines and Machinery, 3; Metals and Metallic Goods, 2; Paper, 6; Printing, Publishing, and Bookbinding, 1; Rubber and Elastic Goods, 1; Wooden Goods, 2; Woollen Goods, 7; and Worsted Goods, 1.

There were 11 instances of the rebuilding of plants destroyed by fire, one in each of the following industries: Boots and Shoes; Boxes, Barrels, Kegs, etc.; Chemical Preparations (Compounded); Cotton Goods; Emery and Sand Paper and Cloth, etc.; Food Preparations; Furniture; Ivory, Bone, Shell, and Horn Goods, etc.; Leather; Rubber and Elastic Goods; and Tallow, Candles, Soap, and Grease.

## Recapitulation. 1901, 1902.

In the following table, we bring forward the data shown in the preceding presentations in comparison with similar facts contained in the Chronology for 1901. The figures are for the nine months ending September 30, 1901, and for the twelve months ending September 30, 1902.

CLASSIFICATION OF SUBJECTS.	NUMBER OF INSTANCES	
	1901 (9 months)	1902 (12 months)
New establishments, firms, etc., . . . . .	109	219
Buildings constructed during the year, . . . . .	78	163
Machinery added to plants, . . . . .	112	132
Other additions to plants, . . . . .	63	38
Addition of new class of product to manufacture, . . . . .	9	9
Rebuilding of burned factories, etc., . . . . .	7	11
Changes from private firms to corporations, . . . . .	15	-
Changes in firms, firm names, etc., . . . . .	39	70
Consolidation of firms and corporations, . . . . .	4	8
Removals of firms and industries <i>to</i> Massachusetts from other States, . . . . .	2	6
Removals of firms and industries <i>from</i> Massachusetts to other States, . . . . .	9	8
Removals from one town to another in Massachusetts, . . . . .	11	20
Permanent shutdowns, . . . . .	12	23
Introduction of electric lighting and power into factories, etc., . . . . .	9	10
Sales of plants in whole or in part, . . . . .	66	95
Sales of plants to industrial combinations, . . . . .	8	16
New corporations, . . . . .	44	132
Amount of authorized capital, . . . . .	\$8,018,600	\$25,779,500
Reorganization of established corporations, . . . . .	-	19
Amount of reorganized capital, . . . . .	-	\$18,445,000
Increases in capital stock, . . . . .	11	27
Amount of increase, . . . . .	\$1,697,000	\$5,415,000
Decreases in capital stock, . . . . .	3	3
Amount of decrease, . . . . .	\$104,500	\$390,000
Net increase in capital stock, . . . . .	\$1,592,500	\$5,025,000
Amount of new capital stock authorized (net), . . . . .	\$9,611,100	\$49,249,500

### Boot and Shoe Shipments.

Two of the three large boot and shoe manufacturing cities, namely, Brockton and Haverhill, prepare records of the shipment of cases of boots and shoes each year. We have appended the figures in the tables below, and while the number of pairs per case is variable it has been estimated that in Brockton the number of pairs to a case will average 22 and in Haverhill, 40. On this basis, we present the actual number of cases and the estimated number of pairs of boots and shoes for each city. The figures are for the years ending September 30, 1901 and 1902.

#### Brockton.

MONTHS.	1900-01		1901-02	
	Cases	Pairs	Cases	Pairs
October, . . . . .	44,057	969,254	56,228	1,237,016
November, . . . . .	46,343	1,019,546	66,848	1,470,656
December, . . . . .	33,918	746,196	43,456	956,032
January, . . . . .	39,694	873,268	52,467	1,154,274
February, . . . . .	45,053	991,166	55,962	1,231,164
March, . . . . .	70,166	1,543,652	55,813	1,227,886
April, . . . . .	50,388	1,108,536	46,305	1,018,710
May, . . . . .	57,470	1,264,340	48,626	1,069,772
June, . . . . .	44,577	980,694	33,012	726,264
July, . . . . .	38,131	838,882	33,895	745,690
August, . . . . .	64,744	1,424,368	65,556	1,442,232
September, . . . . .	47,721	1,049,862	53,423	1,175,306
TOTALS, . . . . .	582,262	12,809,764	611,591	13,455,002

#### Haverhill.

MONTHS.	1900-01		1901-02	
	Cases	Pairs	Cases	Pairs
October, . . . . .	23,723	948,920	33,490	1,339,600
November, . . . . .	31,796	1,271,840	29,661	1,186,440
December, . . . . .	32,657	1,306,280	35,421	1,416,840
January, . . . . .	35,370	1,414,800	44,611	1,784,440
February, . . . . .	34,865	1,394,600	42,262	1,690,480
March, . . . . .	51,130	2,045,200	46,347	1,853,880
April, . . . . .	45,328	1,813,120	42,981	1,719,240
May, . . . . .	36,918	1,476,720	39,559	1,582,360
June, . . . . .	33,162	1,326,480	33,510	1,340,400
July, . . . . .	28,933	1,157,320	29,257	1,170,280
August, . . . . .	28,082	1,123,280	32,604	1,304,160
September, . . . . .	28,445	1,137,800	34,181	1,367,240
TOTALS, . . . . .	410,409	16,416,360	443,884	17,755,360

### Stock Price Quotations.

In the following table are shown the highest and lowest price quotations for the year ending September 30, 1902, and for nine months of the year 1901 (January 1 to September 30), together with the par value of stock. The majority of the figures are Boston prices but where the stock is not listed on the Boston Stock Exchange, New York prices are given.

#### Stock Price Quotations.

	Par Value of Stock	STOCK PRICE QUOTATIONS			
		1901 (9 months)		1902 (12 months)	
		Highest	Lowest	Highest	Lowest
Ætna Mills, . . . . .	100	-	-	90	83½
American Agricultural Chemical Co., .	100	-	-	32¼	20
American Agricultural Chemical Co. (pref.), . . . . .	100	-	-	91	79½
American Bicycle Co., . . . . .	100	-	-	8½	1
American Bicycle Co. (pref.), . . . .	100	-	-	26½	5
American Can Co., . . . . .	100	-	-	16¼	107⅔
American Can Co. (pref.), . . . . .	100	-	-	59¾	51
American Felt Co. (pref.), . . . . .	100	-	-	80½	-
American Glue Co. (pref.), . . . . .	-	-	-	115	111
American Hide & Leather Co., . . . .	100	-	-	13	6
American Hide & Leather Co. (pref.), .	100	-	-	42¾	37
American Linen Co., . . . . .	100	97	-	97	93½
American Soda Fountain Co. (1st pref.),	100	-	-	60¾	54¼
American Sugar Refining Co., . . . .	100	152⅞	117	135⅞	103
American Sugar Refining Co. (pref.), .	100	130	114	120¼	111
American Thread Co. (pref.), . . . .	5	-	-	4⅞	4
American Type Founders' Co., . . . .	100	-	-	47	-
American Waltham Watch Co., . . . .	100	-	-	235½	208
American Woollen Co., . . . . .	100	21⅞	14⅞	18¾	13
American Woollen Co. (pref.), . . . .	100	82½	70⅞	81	73
American Writing Paper Co., . . . . .	100	-	-	6¼	1¼
American Writing Paper Co. (pref.), .	100	-	-	24½	8½
Ames Plow Co., . . . . .	100	-	-	65	-
Appleton Co., . . . . .	100	124	117	122¼	115
Arkwright Mills, . . . . .	100	87½	87½	90	87½
Arlington Mills, . . . . .	100	100⅞	100	118	100
Atlantic Mills, . . . . .	100	62¼	50⅞	60¼	39
Barnaby Manufacturing Co., . . . . .	100	95	75	107½	99
Barnard Manufacturing Co., . . . . .	100	105½	97	105	96
Bigelow Carpet Co., . . . . .	100	98	83¾	105½	98
Boott Cotton Mills, . . . . .	1,000	862½	800	800	575
Border City Manufacturing Co., . . . .	100	118	109½	115½	108

*Stock Price Quotations — Continued.*

	Par Value of Stock	STOCK PRICE QUOTATIONS			
		1901 (9 months)		1902 (12 months)	
		Highest	Lowest	Highest	Lowest
Boston Belting Co., . . . . .	100	215 $\frac{3}{4}$	210 $\frac{3}{8}$	235	220 $\frac{1}{4}$
Boston Duck Co., . . . . .	700	1,035	—	1,175	1,030
Boston Manufacturing Co., 1901 (new), .	100	—	—	100	100
Boston Manufacturing Co. (old), . . .	1,000	340	285	525	300
Boston Woven Hose & Rubber Co. (pref.), . . . . .	100	—	—	95	—
Bowker Fertilizer Co., . . . . .	100	—	—	90 $\frac{1}{2}$	70
Chace Mills, . . . . .	100	93	90	101	95
Chicopee Manufacturing Co., . . . . .	100	90	75	82 $\frac{1}{2}$	49 $\frac{1}{8}$
City Manufacturing Co., . . . . .	100	—	—	122	—
Cornell Mills, . . . . .	100	127 $\frac{1}{2}$	122 $\frac{1}{2}$	128	120 $\frac{1}{2}$
Davol Mills, . . . . .	100	102 $\frac{1}{2}$	100	106	101
Diamond Match Co., . . . . .	100	—	—	139 $\frac{3}{8}$	127 $\frac{1}{8}$
Dwight Manufacturing Co., . . . . .	500	1,037 $\frac{1}{2}$	1,001 $\frac{1}{4}$	1,060	1,000
Everett Mills, . . . . .	100	96	94 $\frac{1}{2}$	105	96
Fisher Manufacturing Co., . . . . .	100	—	—	100	—
Flint Mills, . . . . .	100	105	102	107	100
General Electric Co. (new), . . . . .	100	—	—	183 $\frac{1}{2}$	181 $\frac{3}{4}$
General Electric Co. (old), . . . . .	100	269 $\frac{1}{2}$	183 $\frac{1}{2}$	334	247 $\frac{1}{2}$
Granite Mills, . . . . .	100	127 $\frac{1}{2}$	115	136	128 $\frac{1}{2}$
Grinnell Mills, . . . . .	100	182 $\frac{1}{4}$	132 $\frac{1}{4}$	135	130 $\frac{1}{4}$
Hamilton Manufacturing Co., . . . . .	1,000	865	750	780	745
Hamilton Woollen Co., . . . . .	100	52	50 $\frac{1}{4}$	50	45
Hargraves Mills, . . . . .	100	106	101	106	101 $\frac{1}{2}$
Heywood Bros. & Wakefield Co., . . .	100	—	—	15	12
Heywood Bros. & Wakefield Co. (pref.),	100	—	—	99 $\frac{3}{4}$	97
International Paper Co., . . . . .	100	—	—	24	19
International Paper Co. (pref.), . . . .	100	—	—	79 $\frac{1}{8}$	72 $\frac{1}{2}$
International Steam Pump Co., . . . .	100	49	24 $\frac{1}{8}$	57 $\frac{1}{4}$	47
International Steam Pump Co. (pref.), .	100	89	74	95	87 $\frac{1}{2}$
King Philip Mills, . . . . .	100	115	—	127 $\frac{1}{2}$	120
Lancaster Mills, . . . . .	400	352 $\frac{1}{2}$	300	330	300
Laurel Lake Mills, . . . . .	100	127 $\frac{1}{2}$	125	122 $\frac{1}{2}$	120
Lawrence Manufacturing Co., . . . . .	100	150 $\frac{3}{8}$	110 $\frac{1}{2}$	138 $\frac{1}{8}$	120 $\frac{3}{4}$
Lowell Bleachery (new), . . . . .	100	—	—	101 $\frac{1}{8}$	100
Lowell Bleachery (old), . . . . .	100	60	50	46	25
Lowell Hosiery Co., . . . . .	100	88	—	85	—
Lowell Machine Shops, . . . . .	500	810	792 $\frac{1}{2}$	810	800
Lyman Mills, . . . . .	100	70 $\frac{1}{4}$	67 $\frac{1}{2}$	70	65
Massachusetts Breweries Co., . . . . .	100	—	—	13 $\frac{3}{4}$	—
Massachusetts Cotton Mills, . . . . .	100	101 $\frac{3}{8}$	96	99 $\frac{1}{8}$	90
Mechanics Mills, . . . . .	100	90	82	86	85
Merchants Manufacturing Co., . . . . .	100	110	100	100	85
Merrimac Chemical Co., . . . . .	100	—	—	58 $\frac{3}{8}$	57 $\frac{1}{4}$
Merrimack Manufacturing Co., . . . . .	100	111 $\frac{3}{4}$	95 $\frac{1}{4}$	108	98
Middlesex Co., . . . . .	100	105	100	101	85 $\frac{1}{4}$

*Stock Price Quotations — Concluded.*

	Par Value of Stock	STOCK PRICE QUOTATIONS			
		1901 (9 months)		1902 (12 months)	
		Highest	Lowest	Highest	Lowest
Narragansett Mills, . . . . .	100	104	103	105	100
National Biscuit Co., . . . . .	100	-	-	53¼	41
National Biscuit Co. (pref.), . . . . .	100	-	-	109½	99
National Lead Co., . . . . .	100	25½	15	31	15
National Lead Co. (pref.), . . . . .	100	94½	83	96	74¾
New England Cotton Yarn Co., . . . . .	100	99	90	94	88
New England Gas & Coke Co., . . . . .	100	-	-	9¾	2¾
North Packing & Provision Co., . . . . .	100	-	-	54¾	50
Osborn Mills, . . . . .	100	98	90	92	90
Pacific Mills, . . . . .	1,000	2,015	1,950	2,175	2,070
Parker Mills, . . . . .	100	106	103	107	106
Plymouth Cordage Co., . . . . .	100	-	-	261½	-
Pocasset Manufacturing Co., . . . . .	100	112	-	120½	110
Potomska Mills, . . . . .	100	-	-	103	-
Putnam Nail Co., . . . . .	100	-	-	50	40
Reece Button Hole Machine Co., . . . . .	10	-	-	9	5¾
Renfrew Manufacturing Co., . . . . .	100	-	-	30	-
Richard Borden Manufacturing Co., . . . . .	100	135	120	130	123
Robeson Mills, . . . . .	100	-	-	100	-
Rockport Granite Co., . . . . .	100	-	-	92	90
Saco & Pettee Machine Co., . . . . .	100	106½	100¼	106	-
Sagamore Manufacturing Co., . . . . .	100	109	99	104	100
Seaconnet Mills, . . . . .	100	96	95½	100	92½
Shove Mills, . . . . .	100	70	-	65	60
Soule Mills, . . . . .	100	-	-	102	-
Stafford Mills, . . . . .	100	108	94	97	92
Standard Rope & Twine Co., . . . . .	100	-	-	8¾	4
Tecumseh Mills, . . . . .	100	103	100	115	105
Tremont & Suffolk Mills, . . . . .	100	143½	120	121	85
Union Bag & Paper Co., . . . . .	100	19¾	12	18½	13
Union Bag & Paper Co. (pref.), . . . . .	100	75	65	84½	70
Union Cotton Manufacturing Co., . . . . .	100	134	130	142	134
United Shoe Machinery Co., . . . . .	25	45¾	30¼	57¼	40½
United Shoe Machinery Co. (pref.), . . . . .	25	30	22	33	26¾
U. S. Envelope Co. (pref.), . . . . .	100	-	-	80	75
U. S. Leather Co., . . . . .	100	165¾	7¾	16¾	10¾
U. S. Leather Co. (pref.), . . . . .	100	83¾	69½	90	77¾
U. S. Rubber Co., . . . . .	100	34	13½	19½	12½
U. S. Rubber Co. (pref.), . . . . .	100	84	50	64	43
U. S. Steel Co., . . . . .	100	55	24	46¾	36½
U. S. Steel Co. (pref.), . . . . .	100	1017½	69	97¾	83½
Waltham Bleachery & Dye Works, . . . . .	100	-	-	105	99
Wampanoag Mills, . . . . .	100	90	90	84	57
Wamsutta Mills, . . . . .	100	109¾	108¼	120½	112¾
Weetamoe Mills, . . . . .	100	63½	55	60	56

## Industrial Dividends.

In the following table, we reproduce, as a matter of record, the dividends paid in certain manufacturing corporations doing business in this Commonwealth, for the year ending September 30, 1902, together with the amount of capital stock outstanding.

*Industrial Dividends.*

NAMES OF COMPANIES.	Amount of Capital Stock Outstanding	Dividends Year Ending Sept. 30, 1902
Acushnet Mills, . . . . .	\$500,000	16
Etna Mills, . . . . .	250,000	7
American Agricultural Chemical Co. (pref.), . . . . .	17,153,000	6
American Glue Co., . . . . .	800,000	4
American Linen Co., . . . . .	800,000	7½
American Sugar Refinery Co., . . . . .	45,000,000	7
American Sugar Refinery Co. (pref.), . . . . .	45,000,000	7
American Thread Co., . . . . .	4,890,475	5
American Type Founders' Co., . . . . .	4,000,000	4
American Waltham Watch Co., . . . . .	4,000,000	10
American Woollen Co. (pref.), . . . . .	20,000,000	7
Appleton Co., . . . . .	450,000	3
Arkwright Mills, . . . . .	450,000	4½
Arlington Mills, . . . . .	2,500,000	6
Ashton Valve Co., . . . . .	150,000	6
Atlantic Mills, . . . . .	1,000,000	2
Barnaby Manufacturing Co., . . . . .	400,000	5
Barnard Mills, . . . . .	495,000	5½
Bigelow Carpet Co., . . . . .	4,020,000	5
Border City Manufacturing Co., . . . . .	1,000,000	6
Boston Belting Co., . . . . .	1,000,000	8
Bristol Manufacturing Co., . . . . .	500,000	3
Chace Mills, . . . . .	750,000	6
Chapman Valve Manufacturing Co., . . . . .	600,000	12
City Manufacturing Co., . . . . .	750,000	8
Conanicut Mills, . . . . .	120,000	8
Cornell Mills, . . . . .	400,000	7
Dartmouth Manufacturing Co., . . . . .	600,000	8
Davol Mills, . . . . .	400,000	6
Diamond Match Co., . . . . .	15,000,000	10
Dwight Manufacturing Co., . . . . .	1,200,000	12
Everett Mills, . . . . .	800,000	6
Fisher Manufacturing Co., . . . . .	500,000	6
Flint Mills, . . . . .	580,000	6
General Electric Co., . . . . .	41,946,400	*8

\* Also 3½ on new stock issue and a 66⅔ stock dividend; old capital upon which the per cent was paid was \$24,838,600.

*Industrial Dividends — Continued.*

NAMES OF COMPANIES.	Amount of Capital Stock Outstanding	Dividends Year Ending Sept. 30, 1902
Granite Mills, . . . . .	\$1,000,000	8
Grinnell Manufacturing Co., . . . . .	1,000,000	24½
Hamilton Manufacturing Co., . . . . .	1,800,000	5½
Hargraves Mills, . . . . .	800,000	6
Hathaway Manufacturing Co., . . . . .	800,000	10
Heywood Bros. & Wakefield Co. (pref.), . . . . .	2,000,000	3
International Paper Co. (pref.), . . . . .	22,539,700	6
International Steam Pump Co., . . . . .	12,262,500	5
King Philip Mills, . . . . .	1,000,000	16
Laurel Lake Mills, . . . . .	300,000	5½
Lawrence Manufacturing Co., . . . . .	1,250,000	6
Lowell Machine Shops, . . . . .	900,000	10
Mechanics Mills, . . . . .	750,000	4½
Merchants Manufacturing Co., . . . . .	800,000	3
Middlesex Co., . . . . .	750,000	6
Narragansett Mills, . . . . .	400,000	5½
National Biscuit Co., . . . . .	29,236,000	4
National Biscuit Co. (pref.), . . . . .	23,825,100	7
National Lead Co. (pref.), . . . . .	14,904,000	7
Naumkeag Steam Cotton Mills Co., . . . . .	1,500,000	2
New England Cotton Yarn Co., . . . . .	5,000,000	7
Osborn Mills, . . . . .	750,000	3
Otis Co., . . . . .	800,000	10
Pacific Mills, . . . . .	3,000,000	10
Parker Mills, . . . . .	800,000	8
Pierce Manufacturing Co., . . . . .	600,000	8
Pocasset Mills, . . . . .	600,000	6
Potomska Mills, . . . . .	1,200,000	6
Reece Button Hole Machine Co., . . . . .	1,000,000	8
Revere Rubber Co., . . . . .	1,500,000	6
Reversible Collar Co., . . . . .	350,000	10
Richard Borden Manufacturing Co., . . . . .	800,000	6
Saco & Pettee Machine Co., . . . . .	800,000	6
Sagamore Manufacturing Co., . . . . .	900,000	7
Seaconnet Mills, . . . . .	600,000	4½
Shove Mills, . . . . .	550,000	3
Stafford Mills, . . . . .	1,000,000	3
Stevens Manufacturing Co., . . . . .	350,000	8
Tecumseh Mills, . . . . .	500,000	5½
Tremont & Suffolk Mills, . . . . .	2,000,000	3
Troy Cotton & Woollen Manufactory, . . . . .	300,000	20
Union Bag & Paper Co. (pref.), . . . . .	11,000,000	7
Union Cotton Manufacturing Co., . . . . .	1,200,000	6
United Shoe Machinery Co., . . . . .	10,758,500	8
United Shoe Machinery Co. (pref.), . . . . .	9,360,800	6
United States Envelope Co. (pref.), . . . . .	3,750,000	2½
United States Leather Co. (pref.), . . . . .	62,282,300	6
United States Steel Corp., . . . . .	508,495,200	4
United States Steel Corp. (pref.), . . . . .	510,374,100	7



*Industrial Dividends — Concluded.*

NAMES OF COMPANIES.	Amount of Capital Stock Outstanding	Dividends Year Ending Sept. 30, 1902
Waltham Bleachery & Dye Works, . . . . .	\$400,000	*—
Wampanoag Mills, . . . . .	750,000	3
Wamsutta Mills, . . . . .	3,000,000	6
Weetamoe Mills, . . . . .	550,000	4
Whitman Mills, . . . . .	1,100,000	8

\* \$3 per share.



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PART II.

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STATISTICS OF MANUFACTURES.

1901, 1902.



## PART II.

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# STATISTICS OF MANUFACTURES. 1901, 1902.

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### Introduction.

This Part contains the seventeenth report of the Annual Statistics of Manufactures, issued in accordance with the provisions of Chapter 107 of the Revised Laws of Massachusetts.

The statistical presentations have been prepared from the returns made by 4,658 identical establishments, covering each of the years 1901 and 1902, and are arranged under five section heads, as follows :

I. *Establishments and their Management.* Under this head are presented the data relating to the management of 4,658 establishments, showing the number of establishments controlled by private firms and by corporations, together with the number of partners and stockholders interested therein.

II. *Investment, Materials Used, and Product.* This section covers the amount of capital devoted to production, the cost value of stock and materials used, and the selling value of the goods made and work done.

III. *Labor and its Compensation.* Under this section head are presented the average number of males and females employed; the increase or decrease in average persons employed, with percentages; the smallest, greatest, and average number of persons employed of both sexes; the range of employment and unemployment, as shown by the excess of greatest number over smallest number of persons employed; the number of persons employed, both sexes, by months, with percentages of employment and unemployment for the nine leading industries; the total amount paid in wages during each of the years 1901 and 1902 together with the average yearly earnings per individual, without distinction as to sex or age; and the classified weekly wages paid to adult males and females and to young persons under 21 years of age, for the nine leading industries.

IV. *Working Time and Proportion of Business Done.*

Under this head are shown the average number of days in operation based upon the average number of persons employed, and the proportion of the business done each year in each establishment, on an average, based upon a maximum production of 100 per cent.

V. *General Summary of Industrial Conditions.* This section is devoted to a general *résumé* of the conditions of the industries of the Commonwealth as indicated by the returns made from 4,658 identical establishments in 1901 and 1902.

Each of the above sections is followed by an analysis of the tabular presentations which should be carefully read in order to understand the character and value of the returns.

The term "All Industries," used in these reports for aggregates, refers only to the numerical totals of the various columns and *not* to the total investment, production, persons employed, wages paid, etc., for *all* establishments engaged in the manufacturing and mechanical industries of the State. Such totals are presented only in Census Reports. The returns aggregated in these annual abstracts are intended to furnish comparisons which will indicate the industrial conditions from year to year in the periods between Decennial Censuses. Wherever, therefore, All Industries are mentioned, it is understood that the 80 classified industries shown in the table on pages 46 and 47 are referred to; and wherever numerical aggregates are presented for All Industries or for any single industry, whether for capital devoted to production, stock used, goods made, persons employed, wages paid, etc., only such aggregates are intended as are derived from the 4,658 establishments making returns for both years and for which it is, therefore, possible to make comparisons, unless some other meaning is distinctly stated in the text.

### Establishments and Their Management.

The word "Establishment," as used in this Report, should be understood as meaning the factory, mill, or shop from which a report has been secured, and not the firm or corporation controlling said factory, mill, or shop.

The following table presents the number of establishments compared in each year since the first publication of these annual reports :

YEARS.	Establishments	YEARS.	Establishments	YEARS.	Establishments
1886, 1887, . .	1,027	1893, . . .	4,397	1898, . . .	4,701
1888, . . .	1,140	1894, . . .	4,093	1899, . . .	4,740
1889, . . .	1,364	1895, . . .	3,629	1900, . . .	4,645
1890, . . .	3,041	1896, . . .	4,609	1901, . . .	4,696
1891, . . .	3,745	1897, . . .	4,695	1902, . . .	4,658
1892, . . .	4,473				

It will be noted that the number of establishments compared from year to year, since 1886, ranges from 1,027 as between the years 1886, 1887 to 4,658 as between the years 1901, 1902. The 4,658 returns in the latter comparison include the representative establishments in every industry and may therefore be considered fairly typical of the State as a whole.

The table which follows presents the data as to the total number of establishments considered and the number controlled by private firms and corporations, respectively.

The second table of the series presents the number of partners managing these private firms and the number of stockholders interested in the corporations.

Attention is called to the head-note on page 46 in which it is stated that certain unavoidable duplications occur in the columns devoted to private firms and corporations, and to the head-note on page 48 in which the omission of stockholders for railroad companies and industrial combinations is explained.

## PRIVATE FIRMS AND CORPORATIONS: BY INDUSTRIES.

**1901, 1902.**

[This presentation shows the aggregate number of establishments considered and the number of private firms and corporations engaged in their management. There are certain duplications caused by the fact that the same firm or corporation is often engaged in manufacturing in more than one industry or may carry on two or more establishments in the same industry. The industries in which these duplications occur have been indicated by an asterisk (\*), and the plan adopted has been to count the private firm or corporation only once, if in the same industry. Where they occur in different industries, however, they have been credited to each in turn but in making up the total for All Industries, have been counted only once. The final line of the table, therefore, shows the exact number of different private firms and corporations conducting the specified number of establishments.]

INDUSTRIES.	Number of Es- tablish- ments Con- sidered	NUMBER OF PRIVATE FIRMS		NUMBER OF CORPORATIONS	
		1901	1902	1901	1902
Agricultural implements, . . . . .	8	3	3	5	5
Arms and ammunition, . . . . .	11	6	6	5	5
Artisans' tools, . . . . .	78	55	54	23	24
Awnings, sails, tents, etc., . . . . .	39	38	38	1	1
Bicycles, tricycles, etc., . . . . .	5	1	1	4	4
Boots and shoes,* . . . . .	661	569	559	89	99
Boots and shoes (factory product),*	403	332	324	68	76
Soles, heels, and cut stock,* . . . . .	204	187	187	17	17
Boot and shoe findings, . . . . .	33	29	27	4	6
Stitching, heelings, etc., . . . . .	21	21	21	-	-
Boxes, barrels, kegs, etc.,* . . . . .	121	98	96	21	23
Boxes (paper),* . . . . .	66	54	53	11	12
Brick, tiles, and sewer pipe,* . . . . .	69	46	46	*12	*12
Brooms, brushes, and mops, . . . . .	27	22	22	5	5
Building materials, . . . . .	49	32	31	17	18
Burial cases, caskets, coffins, etc, . . . . .	5	2	2	3	3
Buttons and dress trimmings, . . . . .	14	6	6	8	8
Carpetings,* . . . . .	10	3	2	5	6
Carriages and wagons,* . . . . .	113	97	96	16	17
Cement, kaolin, lime, and plaster,* . . . . .	10	5	4	4	*4
Chemical preparations (compounded), . . . . .	14	6	6	8	8
Clocks and watches, . . . . .	8	6	5	2	3
Clothing, . . . . .	148	113	112	35	36
Cooking, lighting, and heating apparatus,* . . . . .	41	22	22	19	19
Cordage and twine, . . . . .	24	15	14	9	10
Cotton goods,* . . . . .	158	27	27	*120	†118
Cotton goods (woven),* . . . . .	115	12	12	99	99
Cotton yarn and thread,* . . . . .	36	11	11	*18	†16
Cotton waste,* . . . . .	7	4	4	3	3
Crayons, pencils, crucibles, etc, . . . . .	5	2	2	3	3
Drugs and medicines, . . . . .	27	13	12	14	15
Dyestuffs, . . . . .	7	4	4	3	3
Earthen, plaster, and stone ware, . . . . .	11	9	10	2	1
Electrical apparatus and appliances, . . . . .	23	7	7	16	16
Electroplating,* . . . . .	9	9	9	-	-
Emery and sand paper and cloth, etc., . . . . .	5	-	-	5	5
Fancy articles, etc., . . . . .	15	10	10	5	5
Fertilizers,* . . . . .	6	2	2	4	3
Fine arts and taxidermy, . . . . .	3	2	2	1	1
Fireworks and matches, . . . . .	3	2	2	1	1

\* Includes one industrial combination.

† Includes two industrial combinations.



PRIVATE FIRMS AND CORPORATIONS: BY INDUSTRIES. 1901,  
1902—Concluded.

INDUSTRIES.	Number of Es- tablish- ments Con- sidered	NUMBER OF PRIVATE FIRMS		NUMBER OF CORPORATIONS	
		1901	1902	1901	1902
Flax, hemp, and jute goods, . . . . .	9	2	2	7	7
Food preparations,* . . . . .	348	290	283	*51	*58
Furniture,* . . . . .	133	106	102	25	29
Glass, . . . . .	13	11	11	2	2
Glue, isinglass, and starch,* . . . . .	17	12	12	5	4
Hair work (animal and human), . . . . .	6	5	5	1	1
Hose and belting: rubber, linen, etc., . . . . .	6	4	4	2	2
Hosiery and knit goods, . . . . .	35	16	15	19	20
Ink, mucilage, and paste, . . . . .	7	6	6	1	1
Ivory, bone, shell, and horn goods, etc., . . . . .	25	19	18	6	7
Jewelry, . . . . .	100	84	80	16	20
Leather,* . . . . .	94	70	68	†16	†18
Leather goods,* . . . . .	28	16	15	11	12
Liquors (bottled) and carbonated beverages, . . . . .	27	18	18	9	9
Liquors (malt),* . . . . .	39	5	5	*21	*21
Liquors (distilled), . . . . .	7	6	6	1	1
Lumber,* . . . . .	25	20	19	4	5
Machines and machinery,* . . . . .	360	207	201	†144	†150
Metals and metallic goods,* . . . . .	377	240	229	†133	†144
Models, lasts, and patterns,* . . . . .	50	44	43	6	7
Musical instruments and materials, . . . . .	54	28	28	26	26
Oils and illuminating fluids,* . . . . .	9	6	6	2	2
Paints, colors, and crude chemicals,* . . . . .	29	17	17	†12	†12
Paper,* . . . . .	75	16	16	*37	*37
Paper goods,* . . . . .	33	15	15	†17	†17
Perfumes, toilet articles, etc., . . . . .	3	3	3	-	-
Photographs and photographic materials, . . . . .	14	9	9	5	5
Polishes and dressing, . . . . .	33	25	25	8	8
Printing, publishing, and bookbinding,* . . . . .	62	37	35	25	26
Print works, dye works, and bleacheries,* . . . . .	45	23	22	22	23
Railroad construction and equipment,* . . . . .	15	2	2	§8	§8
Rubber and elastic goods,* . . . . .	48	18	18	29	29
Saddlery and harness, . . . . .	26	24	24	2	2
Scientific instruments and appliances, . . . . .	17	13	13	4	4
Shipbuilding, . . . . .	44	39	38	5	6
Silk and silk goods, . . . . .	13	6	7	7	6
Sporting and athletic goods,* . . . . .	11	6	6	5	5
Stone,* . . . . .	186	167	166	18	19
Quarried,* . . . . .	44	29	29	14	14
Cut and monumental, . . . . .	142	138	137	4	5
Straw and palm leaf goods, . . . . .	20	15	14	5	6
Tallow, candles, soap, and grease,* . . . . .	53	42	37	11	14
Tobacco, snuff, and cigars, . . . . .	80	68	66	12	14
Toys and games (children's),* . . . . .	11	6	6	5	5
Trunks and valises, . . . . .	6	6	5	-	1
Whips, lashes, and stocks, . . . . .	14	6	6	8	8
Wooden goods, . . . . .	70	58	57	†12	†13
Woollen goods,* . . . . .	149	86	84	*54	*56
Woven goods and yarn,* . . . . .	120	65	63	*46	*48
Shoddy, waste, etc., . . . . .	29	21	21	8	8
Worsted goods,* . . . . .	39	18	16	†17	†19
ALL INDUSTRIES, . . . . .	4,658	3,217	3,139	1,299	1,366

\* Includes two industrial combinations.

† Includes one industrial combination.

‡ Includes three industrial combinations.

§ Includes three railroad corporations.

|| Includes 17 industrial combinations.

\* Includes 19 industrial combinations.

## PARTNERS AND STOCKHOLDERS: BY INDUSTRIES.

1901, 1902.

[This presentation shows the number of partners and stockholders engaged in the management of the 4,658 establishments. As in the preceding presentation, duplications occur in the industries indicated by an asterisk (\*), since the same firm or corporation is often engaged in manufacturing in more than one industry or may carry on two or more establishments in the same industry. The plan adopted has been to count the partners or stockholders only once if they occur in the same industry. Where they occur in different industries, however, they have been credited to each in turn but in making up the total for All Industries have been counted only once. Stockholders in certain establishments which are operated by railroad companies, or by industrial combinations, many of which have extensive investments of capital outside this Commonwealth, are not included in this presentation, since to include all the stockholders of a railroad company or of an industrial combination in connection with such merely branch establishments, incidental only to the main business of the corporation, would result in abnormally increasing the aggregate.]

INDUSTRIES.	Number of Es- tablish- ments Con- sidered	NUMBER OF PARTNERS		NUMBER OF STOCKHOLDERS	
		1901	1902	1901	1902
Agricultural implements, . . . . .	8	4	4	75	78
Arms and ammunition, . . . . .	11	11	11	182	186
Artisans' tools, . . . . .	78	80	77	961	972
Awnings, sails, tents, etc., . . . . .	39	50	51	10	5
Bicycles, tricycles, etc., . . . . .	5	2	2	53	62
Boots and shoes,* . . . . .	661	944	897	914	993
Boots and shoes (factory product),* . . . . .	403	591	558	548	621
Soles, heels, and cut stock,* . . . . .	204	278	274	346	344
Boot and shoe findings, . . . . .	33	50	40	20	28
Stitching, heeling, etc., . . . . .	21	25	25	-	-
Boxes, barrels, kegs, etc.,* . . . . .	121	131	129	150	144
Boxes (paper),* . . . . .	66	73	73	60	63
Brick, tiles, and sewer pipe,* . . . . .	69	71	73	501	1,350
Brooms, brushes, and mops, . . . . .	27	34	33	56	58
Building materials, . . . . .	49	52	47	177	216
Burial cases, caskets, coffins, etc., . . . . .	5	6	5	112	112
Buttons and dress trimmings, . . . . .	14	8	7	78	80
Carpetings,* . . . . .	10	5	4	997	1,014
Carriages and wagons,* . . . . .	113	156	150	225	215
Cement, kaolin, lime, and plaster,* . . . . .	10	12	10	24	19
Chemical preparations (compounded), . . . . .	14	9	9	176	198
Clocks and watches, . . . . .	8	11	10	627	644
Clothing, . . . . .	148	201	196	736	714
Cooking, lighting, and heating apparatus,* . . . . .	41	32	33	221	222
Cordage and twine, . . . . .	24	25	20	625	695
Cotton goods,* . . . . .	158	48	46	20,719	20,780
Cotton goods (woven),* . . . . .	115	24	24	19,661	19,698
Cotton yarn and thread,* . . . . .	36	18	16	1,035	1,062
Cotton waste,* . . . . .	7	6	6	23	20
Crayons, pencils, crucibles, etc., . . . . .	5	2	2	17	17
Drugs and medicines, . . . . .	27	21	17	443	633
Dyestuffs, . . . . .	7	6	6	63	74
Earthen, plaster, and stone ware, . . . . .	11	9	11	12	5
Electrical apparatus and appliances, . . . . .	23	9	10	597	605
Electroplating,* . . . . .	9	11	11	-	-
Emery and sand paper and cloth, etc., . . . . .	5	-	-	101	86

## PARTNERS AND STOCKHOLDERS: BY INDUSTRIES. 1901, 1902

— Concluded.

INDUSTRIES.	Number of Es- tablish- ments Con- sidered	NUMBER OF PARTNERS		NUMBER OF STOCKHOLDERS	
		1901	1902	1901	1902
Fancy articles, etc., . . . . .	15	12	11	41	50
Fertilizers,* . . . . .	6	3	3	318	371
Fine arts and taxidermy, . . . . .	3	3	3	8	8
Fireworks and matches, . . . . .	3	4	4	5	5
Flax, hemp, and jute goods, . . . . .	9	3	3	153	154
Food preparations,* . . . . .	348	403	402	921	1,404
Furniture,* . . . . .	133	166	156	620	710
Glass, . . . . .	13	18	17	49	48
Glue, isinglass, and starch,* . . . . .	17	24	23	58	42
Hair work (animal and human), . . . . .	6	7	7	136	136
Hose and belting: rubber, linen, etc., . . . . .	6	8	5	9	9
Hosiery and knit goods, . . . . .	35	27	23	1,058	1,047
Ink, mucilage, and paste, . . . . .	7	9	9	4	4
Ivory, bone, shell, and horn goods, etc., . . . . .	25	30	29	29	32
Jewelry, . . . . .	100	168	160	72	85
Leather,* . . . . .	94	116	114	88	100
Leather goods,* . . . . .	28	27	24	238	258
Liquors (bottled) and carbonated beverages, . . . . .	27	29	29	112	111
Liquors (malt), . . . . .	39	14	13	1,836	1,836
Liquors (distilled), . . . . .	7	11	10	26	25
Lumber,* . . . . .	25	36	34	82	93
Machines and machinery,* . . . . .	360	317	307	4,873	6,594
Metals and metallic goods,* . . . . .	377	350	333	4,329	5,225
Models, lasts, and patterns,* . . . . .	50	65	67	33	37
Musical instruments and materials, . . . . .	54	41	41	370	371
Oils and illuminating fluids,* . . . . .	9	7	7	9	9
Paints, colors, and crude chemicals, . . . . .	29	29	29	134	141
Paper,* . . . . .	75	37	38	661	706
Paper goods, . . . . .	33	20	20	411	412
Perfumes, toilet articles, etc., . . . . .	3	3	3	-	-
Photographs and photographic materials, . . . . .	14	11	10	45	45
Polishes and dressing, . . . . .	33	40	39	44	44
Printing, publishing, and bookbinding, . . . . .	62	71	67	312	325
Print works, dye works, and bleacheries,* . . . . .	45	37	35	1,478	1,400
Railroad construction and equipment, . . . . .	15	2	2	120	122
Rubber and elastic goods,* . . . . .	48	43	42	1,224	1,309
Saddlery and harness, . . . . .	26	31	31	20	20
Scientific instruments and appliances, . . . . .	17	20	19	61	55
Shipbuilding, . . . . .	44	50	49	114	119
Silk and silk goods, . . . . .	13	6	8	194	90
Sporting and athletic goods,* . . . . .	11	7	8	52	56
Stone, . . . . .	186	238	245	501	511
Quarried, . . . . .	44	45	45	443	443
Cut and monumental, . . . . .	142	193	200	58	68
Straw and palm leaf goods, . . . . .	20	31	29	24	28
Tallow, candles, soap, and grease,* . . . . .	53	66	51	125	196
Tobacco, snuff, and cigars, . . . . .	80	95	90	68	88
Toys and games (children's), . . . . .	11	13	13	34	33
Trunks and valises, . . . . .	6	11	10	-	2
Whips, lashes, and stocks, . . . . .	14	9	8	234	234
Wooden goods, . . . . .	70	80	79	262	261
Woollen goods,* . . . . .	149	135	133	1,572	1,592
Woven goods and yarn,* . . . . .	120	107	105	1,528	1,552
Shoddy, waste, etc., . . . . .	29	28	28	44	40
Worsted goods,* . . . . .	39	31	27	616	691
ALL INDUSTRIES, . . . . .	4,658	5,020	4,846	50,807	55,649

*Analysis.*

The first of the preceding presentations, pages 46 and 47, shows the number of establishments considered in the present abstract, the number of these establishments which are conducted by private firms and the number which are controlled by corporations. From the final line of the table it appears that out of a total of 4,658 establishments, in 1901, 3,217 were in the hands of private firms and 1,299 were managed by corporations; in 1902, identical establishments being represented, 3,139 were in the hands of private firms, and 1,366 in corporations; a decrease, in 1902 as compared with 1901, of 78 in the number of private firms, or 2.42 per cent, and an increase in the number of corporations of 65, or 5.07 per cent. Included with the corporations, because similar in form of management, are 80 establishments conducted by 17 industrial combinations in 1901, and 85 such establishments controlled by 19 industrial combinations in 1902. As has been stated in previous reports, there are unavoidable duplications in the number of private firms and corporations. They are caused by the fact that the same firm or corporation may be engaged in manufacturing in two or more establishments in the same or sometimes in different industries. If in the same industry, the private firm or corporation has been counted only once. Where, however, they occur in different industries, they are credited to each in turn but in making up the total for All Industries are counted only once. The final line of the table, therefore, shows the exact number of different private firms and corporations managing the establishments in the various industries.

In order to show the industries in which the same firm, corporation, or combination controlled more than one establishment, we present the following table:

INDUSTRIES.	NUMBER		INDUSTRIES.	NUMBER	
	1901	1902		1901	1902
Boots and shoes, . . . .	3	3	Cement, kaolin, lime, and plaster, . . . . .	1	2
Boxes, barrels, kegs, etc., . . . .	2	2	Cooking, lighting, and heating apparatus, . . . . .	1	1
Boxes (paper), . . . . .	2	2	Cotton goods, . . . . .	4	4
Brick, tiles, and sewer pipe, . . . .	11	11			
Carpetings, . . . . .	2	2			

INDUSTRIES.	NUMBER		INDUSTRIES.	NUMBER	
	1901	1902		1901	1902
Cotton yarn and thread, . . .	8	10	Paper goods, . . . . .	1	2
Electroplating, . . . . .	1	1	Printing, publishing, and book-binding, . . . . .	-	1
Fertilizers, . . . . .	-	1	Print works, dye works, and bleacheries, . . . . .	4	3
Food preparations, . . . . .	8	8	Railroad construction and equipment, . . . . .	5	5
Furniture, . . . . .	2	2	Rubber and elastic goods, . . . . .	2	2
Glue, isinglass, and starch, . . .	-	1	Stone, quarried . . . . .	1	1
Leather, . . . . .	9	9	Tallow, candles, soap, and grease, . . . . .	1	4
Leather goods, . . . . .	1	1	Toys and games (children's), . . . . .	1	1
Liquors, malt . . . . .	13	13	Woollen goods, . . . . .	11	11
Lumber, . . . . .	2	2	Worsted goods, . . . . .	6	6
Machines and machinery, . . . .	9	9			
Metals and metallic goods, . . .	5	7	TOTALS, . . . . .	142	153
Oils and illuminating fluids, . .	1	1			
Paints, colors, and crude chemicals, . . . . .	1	1			
Paper, . . . . .	24	24			

It will be noted from the above figures that there were 142 instances where two or more establishments in the different industries specified were carried on under the same management in 1901, 19 of them being private firms, 60 corporations, and 63 combinations. In 1902, there were 153 such instances, consisting of 19 private firms, 68 corporations, and 66 combinations. The increase of 11 establishments in the latter as compared with the former year emphasizes the tendency, already noted in these Reports, toward the modern method of concentration.

The presentation on pages 48 and 49 shows the number of partners and stockholders interested in the management of the various enterprises of the Commonwealth for the years 1901 and 1902.

From the final line of the table it will be noted that the total number of partners declined from 5,020 in 1901, to 4,846 in 1902, a decrease of 174, or 3.47 per cent. The total number of stockholders rose from 50,807 in 1901, to 55,649 in 1902, an increase of 4,842, or 9.53 per cent.

In the table which follows, we present in detail for the nine leading industries and for All Industries, the number of private firms and corporations, the number of male and female partners together with the special partners and estates for private firms, and the number of male and female stockholders together with

the banks, trustees, etc. comprising the corporations. The data for any of the other industries may be obtained upon application, but considerations of space have led to the curtailment of the presentation to the industries specified.

*Private Firms, Partners, Etc.*

CLASSIFICATION.	1901	1902	INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1902	
			Amounts	Percentages
<i>Boots and Shoes.</i>				
Number of establishments considered, . . . . .	661	661	=	=
Number of private firms, . . . . .	569	559	-10	-1.76
Number of corporations, . . . . .	89	99	+10	+11.24
Number of partners, . . . . .	944	897	-47	-4.98
Males, . . . . .	907	860	-47	-5.18
Females, . . . . .	24	22	-2	-8.33
Special and estates, . . . . .	13	15	+2	+15.38
Number of stockholders, . . . . .	914	993	+79	+8.64
Males, . . . . .	699	758	+59	+8.44
Females, . . . . .	183	198	+15	+8.20
Banks, trustees, etc., . . . . .	32	37	+5	+15.63
<i>Carpetings.</i>				
Number of establishments considered, . . . . .	10	10	=	=
Number of private firms, . . . . .	3	2	-1	-33.33
Number of corporations, . . . . .	5	6	+1	+20.00
Number of partners, . . . . .	5	4	-1	-20.00
Males, . . . . .	5	4	-1	-20.00
Number of stockholders, . . . . .	997	1,014	+17	+1.71
Males, . . . . .	398	396	-2	-0.50
Females, . . . . .	423	437	+14	+3.31
Banks, trustees, etc., . . . . .	176	181	+5	+2.84
<i>Cotton Goods.</i>				
Number of establishments considered, . . . . .	158	158	=	=
Number of private firms, . . . . .	27	27	=	=
Number of corporations, . . . . .	119	116	-3	-2.52
Number of industrial combinations, . . . . .	1	2	+1	+100.00
Number of partners, . . . . .	48	46	-2	-4.17
Males, . . . . .	42	41	-1	-2.38
Females, . . . . .	6	5	-1	-16.67
Number of stockholders, . . . . .	20,719	20,780	+61	+0.29
Males, . . . . .	9,416	9,327	-119	-1.26
Females, . . . . .	8,278	8,387	+109	+1.32
Banks, trustees, etc., . . . . .	2,995	3,066	+71	+2.37
<i>Leather.</i>				
Number of establishments considered, . . . . .	94	94	=	=
Number of private firms, . . . . .	70	68	-2	-2.86
Number of corporations, . . . . .	15	17	+2	+13.33
Number of industrial combinations, . . . . .	1	1	=	=

*Private Firms, Partners, Etc. — Continued.*

CLASSIFICATION.	1901	1902	INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1902	
			Amounts	Percentages
<i>Leather—Con.</i>				
Number of partners, . . . . .	116	114	—2	—1.72
Males, . . . . .	112	109	—3	—2.68
Females, . . . . .	3	4	+1	+33.33
Special and estates, . . . . .	1	1	=	=
Number of stockholders, . . . . .	88	100	+12	+13.64
Males, . . . . .	77	87	+10	+12.99
Females, . . . . .	6	7	+1	+16.67
Banks, trustees, etc., . . . . .	5	6	+1	+20.00
<i>Machines and Machinery.</i>				
Number of establishments considered, . . . . .	360	360	=	=
Number of private firms, . . . . .	207	201	—6	—2.90
Number of corporations, . . . . .	143	149	+6	+4.20
Number of industrial combinations, . . . . .	1	1	=	=
Number of partners, . . . . .	317	307	—10	—3.15
Males, . . . . .	298	286	—12	—4.03
Females, . . . . .	8	12	+4	+50.00
Special and estates, . . . . .	11	9	—2	—18.18
Number of stockholders, . . . . .	4,873	6,594	+1,721	+35.32
Males, . . . . .	2,931	4,111	+1,180	+40.26
Females, . . . . .	1,588	2,070	+482	+30.35
Banks, trustees, etc., . . . . .	354	413	+59	+16.67
<i>Metals and Metallic Goods.</i>				
Number of establishments considered, . . . . .	377	377	=	=
Number of private firms, . . . . .	240	229	—11	—4.58
Number of corporations, . . . . .	130	141	+11	+8.46
Number of industrial combinations, . . . . .	3	3	=	=
Number of partners, . . . . .	350	333	—17	—4.86
Males, . . . . .	331	312	—19	—5.74
Females, . . . . .	9	9	=	=
Special and estates, . . . . .	10	12	+2	+20.00
Number of stockholders, . . . . .	4,329	5,225	+896	+20.70
Males, . . . . .	3,213	3,602	+389	+12.11
Females, . . . . .	909	1,435	+526	+57.87
Banks, trustees, etc., . . . . .	207	188	—19	—9.18
<i>Paper.</i>				
Number of establishments considered, . . . . .	75	75	=	=
Number of private firms, . . . . .	16	16	=	=
Number of corporations, . . . . .	35	35	=	=
Number of industrial combinations, . . . . .	2	2	=	=
Number of partners, . . . . .	37	38	+1	+2.70
Males, . . . . .	35	34	—1	—2.86
Females, . . . . .	1	4	+3	+300.00
Special and estates, . . . . .	1	—	—1	—100.00

*Private Firms, Partners, Etc. — Concluded.*

CLASSIFICATION.	1901	1902	INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1902	
			Amounts	Percentages
<i>Paper — Con.</i>				
Number of stockholders, . . . . .	661	706	+45	+6.81
Males, . . . . .	419	435	+16	+3.82
Females, . . . . .	197	224	+27	+13.71
Banks, trustees, etc., . . . . .	45	47	+2	+4.44
<i>Woollen Goods.</i>				
Number of establishments considered, . . . . .	149	149	=	=
Number of private firms, . . . . .	86	84	-2	-2.33
Number of corporations, . . . . .	52	54	+2	+3.85
Number of industrial combinations, . . . . .	2	2	=	=
Number of partners, . . . . .	135	133	-2	-1.48
Males, . . . . .	126	125	-1	-0.79
Females, . . . . .	5	4	-1	-20.00
Special and estates, . . . . .	4	4	=	=
Number of stockholders, . . . . .	1,572	1,592	+20	+1.27
Males, . . . . .	737	676	-61	-8.28
Females, . . . . .	543	570	+27	+4.97
Banks, trustees, etc., . . . . .	292	346	+54	+18.49
<i>Worsted Goods.</i>				
Number of establishments considered, . . . . .	39	39	=	=
Number of private firms, . . . . .	18	16	-2	-11.11
Number of corporations, . . . . .	16	18	+2	+12.50
Number of industrial combinations, . . . . .	1	1	=	=
Number of partners, . . . . .	31	27	-4	-12.90
Males, . . . . .	30	26	-4	-13.33
Females, . . . . .	1	1	=	=
Number of stockholders, . . . . .	616	691	+75	+12.18
Males, . . . . .	343	371	+28	+8.16
Females, . . . . .	197	238	+41	+20.81
Banks, trustees, etc., . . . . .	76	82	+6	+7.89
ALL INDUSTRIES.				
Number of establishments considered, . . . . .	4,658	4,658	=	=
Number of private firms, . . . . .	3,217	3,139	-78	-2.42
Number of corporations, . . . . .	1,282	1,347	+65	+5.07
Number of industrial combinations, . . . . .	17	19	+2	+11.76
Number of partners, . . . . .	5,020	4,846	-174	-3.47
Males, . . . . .	4,767	4,586	-181	-3.80
Females, . . . . .	160	164	+4	+2.50
Special and estates, . . . . .	93	96	+3	+3.23
Number of stockholders, . . . . .	50,807	55,649	+4,842	+9.53
Males, . . . . .	29,111	32,080	+2,969	+10.20
Females, . . . . .	16,423	18,013	+1,590	+9.68
Banks, trustees, etc., . . . . .	5,273	5,556	+283	+5.37
Average partners to a private firm, . . . . .	1.56	1.54	-0.02	-1.28
Average stockholders to a corporation, . . . . .	39.63	41.31	+1.68	+4.24



The figures for All Industries show a decrease in male partners in 1902 as compared with 1901 of 3.80 per cent. The female partners increased 2.50 per cent and the special partners and estates increased 3.23 per cent. The number of male stockholders in corporations rose from 29,111 in 1901, to 32,080 in 1902, a gain of 2,969, or 10.20 per cent. Female stockholders show an increase from 16,423 in 1901, to 18,013 in 1902, a gain of 1,590, or 9.68 per cent. The increase in number of banks, trustees, etc. was 283, or 5.37 per cent in 1902 as compared with 1901. The average number of partners to a private firm was 1.56 in 1901 and 1.54 in 1902, while the average number of stockholders to a corporation was 39.63 in 1901 as against 41.31 in the later year.

The facts for 1902 may be summarized as follows: The returns represent 4,658 establishments classified in 80 industries. These establishments are conducted by 3,139 private firms, 1,347 corporations, and 19 industrial combinations. Expressed in percentages, 69.68 per cent are in the hands of private firms, 29.90 per cent are managed by corporations, and 0.42 per cent by industrial combinations. The private firms are managed by 4,846 persons, of whom 94.64 per cent are males, 3.38 per cent are females, and 1.98 per cent are special partners and estates. The corporations are controlled by 55,649 persons, 57.65 per cent of whom are males, 32.37 per cent are females, and 9.98 per cent are banks, trustees, etc. The average number of partners to a private firm is 1.54, and the average number of stockholders to a corporation 41.31.

### Investment, Materials Used, and Product.

Pages 57 to 62 present comparisons for capital devoted to production, stock and materials used, and goods made and work done for the 4,658 establishments making returns in 1901 and 1902.

“Capital devoted to production” represents the various forms of capital invested in the industries at the date of making return, and comprises the value of land, buildings, and fixtures, the value of machinery, tools, and motive power (when owned), value of patterns and patent rights, cash on hand or in bank, and stock on hand or in process on the last day of the financial year. The last named item, stock on hand and in process, is of course, variable, and a large amount on hand at the date of making the return in any year, would make the total investment relatively larger than in a year when the amount carried, owing to a high market or for other reasons, was comparatively small. The real standing of any industry, would not, however, be affected by either of these conditions.

The figures for stock and materials used include the entire cost value of the materials entering into the fabric article or consumed in the processes necessary to the production of the goods, such as coal, oil, and supplies.

Goods made and work done represents the entire value of the product turned out in the 4,658 establishments entering into the comparisons for the years 1901 and 1902.

## CAPITAL DEVOTED TO PRODUCTION: BY INDUSTRIES.

**1901, 1902.**

[In this presentation, the figures given under "Amount of Capital Devoted to Production" represent the returns made by the same establishments, in each industry, for the years 1901 and 1902, the whole number of establishments considered in "All Industries" being 4,658. The relative increases or decreases in 1902 as compared with 1901 are given with equivalent percentages.]

INDUSTRIES.	Number of Es- tablish- ments Con- sidered	AMOUNT OF CAPITAL DEVOTED TO, PRODUCTION		INCREASE (+) OR DECREASE (-) IN 1902	
		1901	1902	Amounts	Percent- ages
Agricultural implements, . . .	8	\$1,077,679	\$924,062	-\$153,617	-14.25
Arms and ammunition, . . .	11	2,256,166	2,586,495	+330,329	+14.64
Artisans' tools, . . .	78	3,230,031	3,417,524	+187,493	+5.80
Awnings, sails, tents, etc., . . .	39	195,662	216,145	+20,483	+10.47
Bicycles, tricycles, etc., . . .	5	1,164,742	1,241,223	+76,481	+6.57
Boots and shoes, . . .	661	26,406,295	28,150,214	+1,743,919	+6.60
Boots and shoes (factory prod- uct), . . .	403	22,605,720	24,055,892	+1,450,172	+6.42
Soles, heels, and cut stock, . . .	204	3,047,167	3,328,969	+281,802	+9.25
Boot and shoe findings, . . .	33	693,606	699,358	+5,752	+0.83
Stitching, heelings, etc., . . .	21	59,802	65,995	+6,193	+10.36
Boxes, barrels, kegs, etc., . . .	121	3,185,367	3,490,223	+304,856	+9.57
Boxes (paper), . . .	66	1,172,518	1,245,048	+72,530	+6.19
Brick, tiles, and sewer pipe, . . .	69	2,307,766	2,274,440	-33,326	-1.44
Brooms, brushes, and mops, . . .	27	753,155	821,532	+68,377	+9.08
Building materials, . . .	49	1,453,505	1,535,772	+82,267	+4.94
Burial cases, caskets, coffins, etc.,	5	167,928	229,525	+61,597	+36.68
Buttons and dress trimmings, . . .	14	658,745	630,050	-28,695	-4.36
Carpetings, . . .	10	5,958,557	6,471,782	+513,225	+8.61
Carriages and wagons, . . .	113	2,334,574	2,480,781	+146,207	+6.26
Cement, kaolin, lime, and plaster,	10	141,672	171,330	+29,658	+20.93
Chemical preparations (com- pounded), . . .	14	1,677,321	1,179,865	-497,456	-29.66
Clocks and watches, . . .	8	4,742,600	5,147,055	+404,455	+8.53
Clothing, . . .	148	6,283,578	6,141,651	-141,927	-2.26
Cooking, lighting, and heating apparatus, . . .	41	1,364,478	1,384,860	+20,382	+1.49
Cordage and twine, . . .	24	3,497,333	3,312,130	-185,203	-5.30
Cotton goods, . . .	153	125,988,505	127,877,930	+1,889,425	+1.50
Cotton goods (woven), . . .	115	99,435,524	101,161,161	+1,725,637	+1.74
Cotton yarn and thread, . . .	36	25,927,285	26,055,620	+128,335	+0.49
Cotton waste, . . .	7	625,696	661,149	+35,453	+5.67
Crayons, pencils, crucibles, etc., .	5	119,555	135,413	+15,858	+13.26
Drugs and medicines, . . .	27	2,259,524	2,649,621	+390,097	+17.26
Dyestuffs, . . .	7	525,327	572,016	+46,689	+8.89
Earthen, plaster, and stone ware, Electrical apparatus and appli- ances, . . .	11	214,060	194,678	-19,382	-9.05
. . .	23	3,624,952	4,139,176	+514,224	+14.19
Electroplating, . . .	9	93,279	63,238	-30,041	-32.21
Emery and sand paper and cloth, etc., . . .	5	317,105	346,935	+29,830	+9.41
Fancy articles, etc., . . .	15	283,167	391,347	+108,180	+38.20
Fertilizers, . . .	6	1,022,884	1,006,741	-16,143	-1.53
Fine arts and taxidermy, . . .	3	37,200	36,150	-1,050	-2.82
Fireworks and matches, . . .	3	49,254	48,471	-783	-1.59
Flax, hemp, and jute goods, . . .	9	4,298,241	4,477,774	+179,533	+4.18
Food preparations, . . .	348	19,659,004	21,079,273	+1,420,269	+7.22
Furniture, . . .	133	7,900,263	8,592,378	+692,115	+8.76

CAPITAL DEVOTED TO PRODUCTION: BY INDUSTRIES—1901,  
1902—Concluded.

INDUSTRIES.	Number of Es- tablish- ments Con- sidered	AMOUNT OF CAPITAL DEVOTED TO PRODUCTION		INCREASE (+) OR DECREASE (—) IN 1902	
		1901	1902	Amounts	Percent- ages
Glass, . . . . .	13	\$168,885	\$160,713	—\$8,172	—4.84
Glue, isinglass, and starch, . . .	17	547,027	584,338	+37,311	+6.82
Hair work (animal and human), . .	6	127,133	128,076	+943	+0.74
Hose and belting: rubber, linen, etc., . . . . .	6	148,366	143,585	—4,781	—3.22
Hosiery and knit goods, . . . .	35	4,289,645	4,358,682	+69,037	+1.61
Ink, muclage, and paste, . . . .	7	94,327	105,202	+10,875	+11.53
Ivory, bone, shell, and horn goods, etc., . . . . .	25	745,643	819,381	+73,738	+9.89
Jewelry, . . . . .	100	3,631,639	3,947,408	+315,769	+8.69
Leather, . . . . .	94	8,526,364	8,629,068	+102,704	+1.20
Leather goods, . . . . .	28	2,137,931	1,956,983	—180,948	—8.46
Liquors (bottled) and carbonated beverages, . . . . .	27	634,819	633,131	—1,688	—0.27
Liquors (malt), . . . . .	39	15,347,104	15,169,428	—177,676	—1.16
Liquors (distilled), . . . . .	7	447,290	412,659	—34,631	—7.74
Lumber, . . . . .	25	977,326	1,092,521	+115,195	+11.79
Machines and machinery, . . . .	360	39,990,855	41,521,821	+1,530,966	+3.83
Metals and metallic goods, . . .	377	27,022,491	27,551,283	+528,792	+1.96
Models, lasts, and patterns, . .	50	832,007	855,938	+23,931	+2.88
Musical instruments and mate- rials, . . . . .	54	4,071,557	4,317,037	+245,480	+6.03
Oils and illuminating fluids, . .	9	583,571	633,667	+50,096	+8.58
Paints, colors, and crude chem- icals, . . . . .	29	829,174	917,751	+88,577	+10.68
Paper, . . . . .	75	20,708,652	21,747,744	+1,039,092	+5.02
Paper goods, . . . . .	33	3,039,720	3,522,788	+483,068	+15.89
Perfumes, toilet articles, etc., . .	3	25,113	33,386	+8,273	+32.94
Photographs and photographic materials, . . . . .	14	212,592	242,914	+30,322	+14.26
Polishes and dressing, . . . . .	33	576,373	683,971	+107,598	+18.67
Printing, publishing, and book- binding, . . . . .	62	7,260,293	7,479,647	+219,354	+3.02
Print works, dye works, and bleacheries, . . . . .	45	14,896,544	15,475,540	+578,996	+3.89
Railroad construction and equip- ment, . . . . .	15	2,011,070	2,348,293	+337,223	+16.77
Rubber and elastic goods, . . .	48	15,683,271	16,279,471	+596,200	+3.80
Saddlery and harness, . . . . .	26	264,595	350,855	+86,260	+32.60
Scientific instruments and appli- ances, . . . . .	17	1,322,411	1,537,655	+215,244	+16.28
Shipbuilding, . . . . .	44	1,491,968	1,480,086	—11,882	—0.80
Silk and silk goods, . . . . .	13	2,298,030	2,361,331	+63,301	+2.75
Sporting and athletic goods, . .	11	312,922	400,609	+87,687	+28.02
Stone, . . . . .	186	5,626,437	5,592,101	—34,336	—0.61
Quarried, . . . . .	44	3,758,848	3,607,376	—151,472	—4.03
Cut and monumental, . . . . .	142	1,867,589	1,984,725	+117,136	+6.27
Straw and palm leaf goods, . . .	20	2,164,305	2,136,019	—28,286	—1.31
Tallow, candles, soap, and grease,	53	2,301,288	2,294,707	—6,581	—0.29
Tobacco, snuff, and cigars, . . .	80	1,196,910	1,163,341	—33,569	—2.80
Toys and games (children's), . .	11	502,059	514,659	+12,600	+2.51
Trunks and valises, . . . . .	6	37,740	43,192	+5,452	+14.45
Whips, lashes, and stocks, . . .	14	521,591	585,213	+63,622	+12.20
Wooden goods, . . . . .	70	1,471,110	1,635,804	+164,694	+11.20
Woollen goods, . . . . .	149	25,986,880	27,817,893	+1,831,013	+7.05
Woven goods and yarn, . . . . .	120	24,886,334	26,552,387	+1,666,053	+6.89
Shoddy, waste, etc., . . . . .	29	1,100,546	1,265,506	+164,960	+14.99
Worsted goods, . . . . .	39	16,080,609	18,026,729	+1,946,120	+12.10
ALL INDUSTRIES, . . . . .	4,658	\$473,577,629	\$492,355,468	+\$18,777,839	+3.97

## STOCK USED: BY INDUSTRIES.

1901, 1902.

[In this presentation, the figures given under "Value of Stock and Materials Used" represent the returns made by the same establishments, in each industry, for the years 1901 and 1902, the whole number of establishments considered in "All Industries" being 4,658. The relative increases or decreases in 1902 as compared with 1901 are given with equivalent percentages.]

INDUSTRIES.	Number of Establishments Considered	VALUE OF STOCK AND MATERIALS USED		INCREASE (+) OR DECREASE (-) IN 1902	
		1901	1902	Amounts	Percentages
Agricultural implements, . . .	8	\$545,848	\$639,420	+\$93,572	+17.14
Arms and ammunition, . . .	11	755,034	940,232	+185,198	+24.53
Artisans' tools, . . .	78	1,301,032	1,568,413	+267,381	+20.55
Awnings, sails, tents, etc., . .	39	385,744	406,813	+21,069	+5.46
Bicycles, tricycles, etc., . . .	5	511,136	357,855	-153,281	-29.99
Boots and shoes, . . .	661	87,689,796	90,380,233	+2,690,437	+3.07
Boots and shoes (factory product), . .	403	72,796,421	74,669,912	+1,873,491	+2.57
Soles, heels, and cut stock, . . .	204	13,434,409	14,163,205	+728,796	+5.42
Boot and shoe findings, . . .	33	1,417,090	1,497,767	+80,677	+5.69
Stitching, heeling, etc., . . .	21	41,876	49,349	+7,473	+17.85
Boxes, barrels, kegs, etc., . . .	121	3,466,023	3,888,492	+422,469	+12.19
Boxes (paper), . . .	66	1,229,907	1,276,185	+46,278	+3.76
Brick, tiles, and sewer pipe, . .	69	477,181	525,240	+48,059	+10.07
Brooms, brushes, and mops, . .	27	983,959	1,141,876	+157,917	+16.05
Building materials, . . .	49	1,294,704	1,377,882	+83,178	+6.42
Burial cases, caskets, coffins, etc.,	5	160,335	182,613	+22,278	+13.89
Buttons and dress trimmings, . .	14	343,157	407,179	+64,022	+18.66
Carpetings, . . .	10	4,703,264	6,525,398	+1,822,134	+38.74
Carriages and wagons, . . .	113	1,664,961	1,846,615	+181,654	+10.91
Cement, kaolin, lime, and plaster,	10	137,725	151,917	+14,192	+10.30
Chemical preparations (compounded), . . .	14	1,299,254	1,143,461	-155,793	-11.99
Clocks and watches, . . .	8	563,245	651,016	+87,765	+15.58
Clothing, . . .	148	13,139,322	14,205,983	+1,066,661	+8.12
Cooking, lighting, and heating apparatus, . . .	41	1,271,064	1,432,108	+161,044	+12.67
Cordage and twine, . . .	24	6,161,147	8,087,995	+1,926,848	+31.27
Cotton goods, . . .	158	69,307,173	72,623,827	+3,316,654	+4.79
Cotton goods (woven), . . .	115	57,371,350	58,807,454	+1,436,104	+2.50
Cotton yarn and thread, . . .	36	10,294,074	11,903,329	+1,609,255	+15.63
Cotton waste, . . .	7	1,641,749	1,913,044	+271,295	+16.52
Crayons, pencils, crucibles, etc.,	5	80,776	74,882	-5,894	-7.29
Drugs and medicines, . . .	27	1,842,758	1,648,383	-194,375	-10.55
Dyestuffs, . . .	7	311,188	352,023	+40,835	+13.12
Earthen, plaster, and stone ware,	11	95,909	87,053	-8,856	-9.23
Electrical apparatus and appliances, . . .	23	5,671,847	6,775,979	+1,104,132	+19.47
Electroplating, . . .	9	44,870	40,963	-3,907	-8.71
Emery and sand paper and cloth, etc., . . .	5	200,077	262,487	+62,410	+31.19
Fancy articles, etc., . . .	15	470,241	555,693	+85,452	+18.17
Fertilizers, . . .	6	1,182,010	1,202,354	+20,344	+1.72
Fine arts and taxidermy, . . .	3	6,965	17,625	+10,660	+153.05
Fireworks and matches, . . .	3	60,711	46,845	-13,866	-22.84
Flax, hemp, and jute goods, . . .	9	3,404,890	3,417,047	+12,157	+0.36
Food preparations, . . .	348	65,022,517	69,303,831	+4,281,314	+6.58
Furniture, . . .	133	6,438,428	6,999,633	+561,205	+8.72

## STOCK USED: BY INDUSTRIES—1901, 1902—Concluded.

INDUSTRIES.	Number of Es- tablish- ments Con- sidered	VALUE OF STOCK AND MATERIALS USED		INCREASE (+) OR DECREASE (-) IN 1902	
		1901	1902	Amounts	Percent- ages
Glass, . . . . .	13	\$124,415	\$163,385	+\$38,970	+31.32
Glue, isinglass, and starch, . .	17	677,297	725,941	+48,644	+7.18
Hair work (animal and human), .	6	261,469	258,688	-2,781	-1.06
Hose and belting: rubber, linen, etc., . . . . .	6	259,286	292,440	+33,154	+12.79
Hosiery and knit goods, . . .	35	3,053,541	3,240,374	+186,833	+6.12
Ink, mucilage, and paste, . . .	7	200,195	244,800	+44,605	+22.28
Ivory, bone, shell, and horn goods, etc., . . . . .	25	973,171	1,170,341	+197,170	+20.26
Jewelry, . . . . .	100	3,994,996	4,304,642	+309,646	+7.75
Leather, . . . . .	94	18,541,218	18,005,012	-536,206	-2.89
Leather goods, . . . . .	28	2,203,500	2,460,138	+256,638	+11.65
Liquors (bottled) and carbonated beverages, . . . . .	27	776,642	807,619	+30,977	+3.99
Liquors (malt), . . . . .	39	3,154,293	3,096,687	-57,606	-1.83
Liquors (distilled), . . . . .	7	1,642,127	1,783,819	+141,692	+8.63
Lumber, . . . . .	25	1,619,607	1,783,900	+164,293	+10.14
Machines and machinery, . . .	360	17,804,567	19,709,898	+1,905,331	+10.70
Metals and metallic goods, . .	377	25,454,330	26,221,911	+767,581	+3.02
Models, lasts, and patterns, . .	50	401,572	377,811	-23,761	-5.92
Musical instruments and mate- rials, . . . . .	54	2,641,385	2,878,461	+237,076	+8.98
Oils and illuminating fluids, . .	9	1,774,168	1,514,704	-259,464	-14.62
Paints, colors, and crude chemi- cals, . . . . .	29	1,129,987	1,310,723	+180,736	+15.99
Paper, . . . . .	75	14,080,401	15,802,400	+1,721,999	+12.23
Paper goods, . . . . .	33	3,430,706	3,665,178	+234,472	+6.83
Perfumes, toilet articles, etc., .	3	152,416	164,305	+11,889	+7.80
Photographs and photographic materials, . . . . .	14	342,913	309,131	-33,782	-9.85
Polishes and dressing, . . . . .	33	1,400,639	1,523,883	+123,244	+8.80
Printing, publishing, and book- binding, . . . . .	62	2,788,733	2,938,629	+149,896	+5.38
Print works, dye works, and bleacheries, . . . . .	45	19,982,446	24,235,316	+4,252,870	+21.28
Railroad construction and equip- ment, . . . . .	15	2,083,898	2,829,813	+745,915	+35.79
Rubber and elastic goods, . . .	48	17,400,450	19,337,454	+1,937,004	+11.13
Saddlery and harness, . . . . .	26	676,727	737,204	+60,477	+8.94
Scientific instruments and appli- ances, . . . . .	17	1,224,630	1,314,680	+90,050	+7.35
Shipbuilding, . . . . .	44	923,589	876,512	-47,077	-5.10
Silk and silk goods, . . . . .	13	3,265,544	3,950,902	+685,358	+20.99
Sporting and athletic goods, . .	11	349,785	490,696	+140,911	+40.29
Stone, . . . . .	186	1,310,825	1,425,971	+115,146	+8.78
Quarried, . . . . .	44	177,583	217,159	+39,576	+22.29
Cut and monumental, . . . . .	142	1,133,242	1,208,812	+75,570	+6.67
Straw and palm leaf goods, . . .	20	2,717,681	3,153,508	+435,827	+16.04
Tallow, candles, soap, and grease,	53	3,063,130	3,594,397	+531,267	+17.34
Tobacco, snuff, and cigars, . .	80	1,890,390	2,042,385	+151,995	+8.04
Toys and games (children's), . .	11	353,096	487,769	+134,673	+38.14
Trunks and valises, . . . . .	6	67,719	76,216	+8,497	+12.55
Whips, lashes, and stocks, . . .	14	570,092	767,646	+197,554	+34.65
Wooden goods, . . . . .	70	1,118,899	1,183,258	+64,359	+5.75
Woollen goods, . . . . .	149	24,099,153	28,263,950	+4,164,797	+17.28
Woven goods and yarn, . . . . .	120	22,898,518	26,853,449	+3,954,931	+17.27
Shoddy, waste, etc., . . . . .	29	1,200,635	1,410,501	+209,866	+17.48
Worsted goods, . . . . .	39	25,093,563	28,069,781	+2,976,218	+11.86
ALL INDUSTRIES, . . . . .	4,658	\$497,299,389	\$538,137,823	+\$40,838,434	+8.21

## GOODS MADE: BY INDUSTRIES.

1901, 1902.

[In this presentation, the figures given under "Value of Goods Made and Work Done" represent the returns made by the same establishments, in each industry, for the years 1901 and 1902, the whole number of establishments considered in "All Industries" being 4,658. The relative increases or decreases in 1902 as compared with 1901 are given with equivalent percentages. These percentages, based upon returns from 4,658 identical establishments, may be considered a fair indication of the increase or decrease in value of product in the various industries for *all* the establishments in the State.]

INDUSTRIES.	Number of Establishments Considered	VALUE OF GOODS MADE AND WORK DONE		INCREASE (+) OR DECREASE (—) IN 1902	
		1901	1902	Amounts	Percentages
Agricultural implements, . . .	8	\$1,316,996	\$1,583,709	+\$266,713	+20.25
Arms and ammunition, . . .	11	3,494,133	3,693,388	+201,255	+5.76
Artisans' tools, . . .	78	4,239,523	4,893,426	+653,903	+15.42
Awnings, sails, tents, etc., . .	39	727,392	751,500	+24,108	+3.31
Bicycles, tricycles, etc., . . .	5	902,076	825,775	—76,301	—8.46
Boots and shoes, . . .	661	138,010,800	143,556,265	+5,545,465	+4.02
Boots and shoes (factory product), . .	403	117,929,054	122,139,043	+4,209,989	+3.57
Soles, heels, and cut stock, . .	204	17,509,637	18,681,341	+1,171,704	+6.69
Boot and shoe findings, . . .	33	2,317,119	2,437,576	+120,457	+5.20
Stitching, heeling, etc., . . .	21	254,990	295,305	+43,315	+16.99
Boxes, barrels, kegs, etc., . .	121	6,403,916	6,996,535	+592,619	+9.25
Boxes (paper), . . .	66	2,863,992	2,939,033	+75,041	+2.62
Brick, tiles, and sewer pipe, . .	69	1,710,279	1,863,960	+153,681	+9.10
Brooms, brushes, and mops, . .	27	1,778,394	2,001,406	+223,012	+12.54
Building materials, . . .	49	2,621,562	2,862,153	+240,591	+9.18
Burial cases, caskets, coffins, etc.,	5	367,158	386,043	+18,885	+5.14
Buttons and dress trimmings, . .	14	832,067	951,657	+119,590	+14.37
Carpetings, . . .	10	8,214,183	10,573,836	+2,359,653	+28.73
Carriages and wagons, . . .	113	3,965,056	4,327,305	+362,249	+9.14
Cement, kaolin, lime, and plaster, .	10	345,408	380,819	+35,411	+10.25
Chemical preparations (compounded), . . .	14	2,065,539	2,260,969	+195,430	+9.46
Clocks and watches, . . .	8	4,195,315	3,469,913	—725,402	—17.29
Clothing, . . .	148	24,073,502	25,921,773	+1,848,271	+7.68
Cooking, lighting, and heating apparatus, . . .	41	3,601,815	3,961,049	+360,134	+10.00
Cordage and twine, . . .	24	7,814,425	10,317,700	+2,503,275	+32.03
Cotton goods, . . .	158	117,015,196	129,544,308	+12,529,112	+10.71
Cotton goods (woven), . . .	115	98,441,213	107,869,011	+9,427,798	+9.58
Cotton yarn and thread, . . .	36	16,591,007	19,447,988	+2,856,981	+17.22
Cotton waste, . . .	7	1,982,976	2,227,309	+244,333	+12.32
Crayons, pencils, crucibles, etc., .	5	203,290	200,346	—2,944	—1.45
Drugs and medicines, . . .	27	5,180,522	5,051,565	—128,957	—2.49
Dyestuffs, . . .	7	460,606	543,289	+82,683	+17.95
Earthen, plaster, and stone ware, .	11	325,302	344,795	+19,493	+5.68
Electrical apparatus and appliances, . . .	23	10,518,592	11,451,366	+932,774	+8.87
Electroplating, . . .	9	169,021	168,167	—854	—0.51
Emery and sand paper and cloth, etc., . . .	5	689,507	870,217	+180,710	+26.21
Fancy articles, etc., . . .	15	963,425	1,084,415	+120,990	+12.56
Fertilizers, . . .	6	1,912,138	2,138,767	+226,629	+11.85
Fine arts and taxidermy, . . .	3	45,272	61,034	+15,762	+34.82
Fireworks and matches, . . .	3	152,799	125,333	—27,466	—17.98
Flax, hemp, and jute goods, . . .	9	5,023,216	5,614,548	+591,332	+11.77
Food preparations, . . .	348	81,562,009	85,604,895	+4,042,886	+4.96
Furniture, . . .	133	12,086,656	13,069,421	+982,765	+8.13

## GOODS MADE: BY INDUSTRIES—1901, 1902—Concluded.

INDUSTRIES.	Number of Establishments Considered	VALUE OF GOODS MADE AND WORK DONE		INCREASE (+) OR DECREASE (—) IN 1902	
		1901	1902	Amounts	Percentages
Glass, . . . . .	13	\$366,750	\$440,284	+\$73,534	+20.05
Glue, isinglass, and starch, . . .	17	947,755	1,110,353	+162,598	+17.16
Hair work (animal and human), .	6	341,283	343,680	+2,397	+0.70
Hose and belting: rubber, linen, etc., . . . . .	6	402,832	449,197	+46,365	+11.51
Hosiery and knit goods, . . . .	35	6,981,787	7,330,653	+348,866	+5.00
Ink, mucilage, and paste, . . .	7	576,520	607,111	+30,591	+5.31
Ivory, bone, shell, and horn goods, etc., . . . . .	25	2,023,508	2,508,915	+485,407	+23.99
Jewelry, . . . . .	100	9,960,848	10,657,742	+696,894	+7.00
Leather, . . . . .	94	25,410,837	23,558,991	—1,851,846	—7.29
Leather goods, . . . . .	28	3,726,637	4,138,298	+411,661	+11.05
Liquors (bottled) and carbonated beverages, . . . . .	27	1,265,256	1,244,941	—20,315	—1.61
Liquors (malt), . . . . .	39	12,037,825	10,861,841	—1,175,984	—9.77
Liquors (distilled), . . . . .	7	2,969,024	2,928,614	—40,410	—1.36
Lumber, . . . . .	25	2,868,348	3,042,619	+174,271	+6.08
Machines and machinery, . . . .	360	49,359,957	52,820,803	+3,460,846	+7.01
Metals and metallic goods, . . .	377	47,394,460	49,419,924	+2,025,464	+4.27
Models, lasts, and patterns, . .	50	1,379,478	1,377,072	—2,406	—0.17
Musical instruments and materials, . . . . .	54	7,192,180	8,514,145	+1,321,965	+18.38
Oils and illuminating fluids, . .	9	2,191,882	1,936,113	—255,769	—11.67
Paints, colors, and crude chemicals, . . . . .	29	1,993,970	2,156,012	+162,042	+8.13
Paper, . . . . .	75	25,048,945	28,228,294	+3,179,349	+12.69
Paper goods, . . . . .	33	5,911,743	6,547,366	+635,623	+10.75
Perfumes, toilet articles, etc., .	3	183,268	200,897	+17,629	+9.62
Photographs and photographic materials, . . . . .	14	639,366	650,288	+10,922	+1.71
Polishes and dressing, . . . . .	33	2,539,676	2,708,107	+168,431	+6.63
Printing, publishing, and book-binding, . . . . .	62	10,241,029	10,852,261	+611,232	+5.97
Print works, dye works, and bleacheries, . . . . .	45	27,298,824	33,018,096	+5,719,272	+20.95
Railroad construction and equipment, . . . . .	15	3,908,080	5,084,649	+1,126,569	+28.83
Rubber and elastic goods, . . .	48	39,950,196	44,380,434	+4,430,238	+11.09
Saddlery and harness, . . . . .	26	1,065,708	1,237,820	+172,112	+16.15
Scientific instruments and appliances, . . . . .	17	2,585,026	2,946,205	+361,179	+13.97
Shipbuilding, . . . . .	44	1,928,849	1,797,107	—131,742	—6.83
Silk and silk goods, . . . . .	13	5,249,023	5,830,796	+581,773	+11.08
Sporting and athletic goods, . .	11	731,339	1,020,280	+288,941	+39.51
Stone, . . . . .	186	5,601,405	5,823,662	+222,257	+3.97
Quarried, . . . . .	44	2,113,461	2,197,390	+83,929	+3.97
Cut and monumental, . . . . .	142	3,487,944	3,626,272	+138,328	+3.97
Straw and palm leaf goods, . . .	20	5,046,617	5,803,309	+756,692	+14.99
Tallow, candles, soap, and grease, . . . . .	53	4,513,131	5,106,525	+593,394	+13.15
Tobacco, snuff, and cigars, . . .	80	4,772,115	4,985,042	+212,927	+4.46
Toys and games (children's), . .	11	835,756	981,538	+145,782	+17.44
Trunks and valises, . . . . .	6	141,851	156,665	+14,814	+10.44
Whips, lashes, and stocks, . . .	14	1,471,033	1,790,030	+318,997	+21.69
Wooden goods, . . . . .	70	2,435,761	2,549,412	+113,651	+4.67
Wooden goods, . . . . .	149	42,317,936	49,792,584	+7,474,648	+17.66
Woven goods and yarn, . . . . .	120	40,264,163	47,468,129	+7,203,966	+17.89
Shoddy, waste, etc., . . . . .	29	2,053,773	2,324,455	+270,682	+13.18
Worsted goods, . . . . .	39	40,213,217	47,909,654	+7,696,437	+19.14
ALL INDUSTRIES, . . . . .	4,658	\$869,872,113	\$945,193,889	+\$75,321,776	+8.66



*Analysis.*

The figures in the first table of this section, pages 57 and 58, show the amount of capital devoted to production, by industries, for 1901 and 1902.

With regard to capital, it should be said that the figures given are comparable only with figures similarly obtained, and that the various items from which it is made up should be definitely known in order that misleading deductions may not be made. As has been stated, therefore, capital devoted to production, as shown in these reports, consists of the value of land, buildings, and fixtures, value of machinery, tools, and motive power (when owned), value of patterns and patent rights, cash on hand or in bank, and stock on hand unused or in process at the date of making the return.

Referring to the table, it will be found that the largest amount of capital appears in Cotton Goods, the figures for the various subdivisions of that industry aggregating \$125,988,505 for 1901, as against \$127,877,930 for 1902, an increase of \$1,889,425, or 1.50 per cent. No other industry approaches these figures. The nearest, however, is Machines and Machinery, in which the amount of capital devoted to production in 1901 was \$39,990,855, as against \$41,521,821 in 1902, an increase of \$1,530,966, or 3.83 per cent.

Of the 80 industries represented in the comparison, 22 show decreases in the amount of capital devoted to production in 1902 as against 1901. None of them, however, are among the large industries of the State, and the decreases in most cases are small in amount. All of the nine leading industries show increases, the percentages being as follows: Boots and Shoes, 6.60; Carpetings, 8.61; Cotton Goods, 1.50; Leather, 1.20; Machines and Machinery, 3.83; Metals and Metallic Goods, 1.96; Paper, 5.02; Woollen Goods, 7.05; and Worsted Goods, 12.10.

The aggregate amount of capital devoted to production was \$473,577,629 in 1901, as against \$492,355,468 in 1902, an increase of \$18,777,839, or 3.97 per cent.

The table on pages 59 and 60 presents a comparison of the stock and materials used in the 4,658 establishments making

returns in 1901 and 1902. The total for All Industries was \$497,299,389 in 1901, and \$538,137,823 in 1902, a gain of \$40,838,434, or 8.21 per cent.

Of the leading industries, the highest percentage of gain appears in Carpetings, the value of stock used in 1901 rising from \$4,703,264 to \$6,525,398, or 38.74 per cent. The other leading industries show percentages of gain as follows: Boots and Shoes, 3.07; Cotton Goods, 4.79; Machines and Machinery, 10.70; Metals and Metallic Goods, 3.02; Paper, 12.23; Woollen Goods, 17.28; and Worsted Goods, 11.86. The only decrease is shown in the leather industry, namely, 2.89 per cent.

Of the 80 classified industries represented in the table, 14 show decreases in value of stock and materials used in 1902 as compared with 1901 ranging from 1.06 per cent in Hair Work (Animal and Human) to 29.99 per cent in Bicycles, Tricycles, etc. Examination of the figures, however, will show that none of these industries are among the principal ones of the State and that the decreases in amount are not material.

The presentation on pages 61 and 62 exhibits the value of goods made in the 4,658 establishments making returns for the years 1901 and 1902. The final line of the table shows that the aggregate product turned out in these establishments was \$869,872,113 in 1901, and \$945,193,889 in 1902, an increase of 8.66 per cent.

Of the 80 industries in the presentation, 13 only show decreases, the percentages of decrease ranging from 0.17 in Models, Lasts, and Patterns to 17.98 in Fireworks and Matches. The other 67 classified industries all show percentages of increase, the lowest, 0.70, being found in Hair Work (Animal and Human) and the highest in Sporting and Athletic Goods where an increase of 39.51 per cent appears.

Although only a comparatively small number of establishments appears in these annual comparisons, the value of goods made in them represents over 80 per cent of the aggregate product value for the State in any year, and any fluctuation in employment or in output shown in these establishments would necessarily be reflected in the aggregate for all establishments were a complete canvass taken. The percentages of increase or

decrease in the value of goods made in these 4,658 establishments, therefore, is typical, and may be fairly taken as indicating the rate of increase or decrease in *all* the establishments in the State or in any specified industry.

We reproduce in the following table the figures for the nine leading industries :

INDUSTRIES.	VALUE OF GOODS MADE AND WORK DONE		INCREASE (+) OR DECREASE (—) IN 1902	
	1901	1902	Amounts	Percent- ages
Boots and shoes (aggregate), . . .	\$138,010,800	\$143,556,265	+\$5,545,465	+4.02
Factory product, . . . . .	117,929,054	122,139,043	+4,209,989	+3.57
Soles, heels, and cut stock, . . .	17,509,637	18,681,341	+1,171,704	+6.69
Findings, . . . . .	2,317,119	2,437,576	+120,457	+5.20
Stitching, heeling, etc., . . . .	254,990	298,305	+43,315	+16.99
Carpetings, . . . . .	8,214,183	10,573,836	+2,359,653	+28.73
Cotton goods (aggregate), . . . .	117,015,196	129,544,308	+12,529,112	+10.71
Woven goods, . . . . .	98,441,213	107,869,011	+9,427,798	+9.58
Yarn and thread, . . . . .	16,591,007	19,447,988	+2,856,981	+17.22
Waste, . . . . .	1,982,976	2,227,309	+244,333	+12.32
Leather, . . . . .	25,410,837	23,558,991	—1,851,846	—7.29
Machines and machinery, . . . .	49,359,957	52,820,803	+3,460,846	+7.01
Metals and metallic goods, . . . .	47,394,460	49,419,924	+2,025,464	+4.27
Paper, . . . . .	25,048,945	28,228,294	+3,179,349	+12.69
Woollen goods (aggregate), . . . .	42,317,936	49,792,584	+7,474,648	+17.66
Woven goods and yarn, . . . .	40,264,163	47,468,129	+7,203,966	+17.89
Shoddy, waste, etc., . . . . .	2,053,773	2,324,455	+270,682	+13.18
Worsted goods, . . . . .	40,213,217	47,909,654	+7,696,437	+19.14
Nine industries, . . . . .	492,985,531	535,404,659	+42,419,128	+8.60
Other industries, . . . . .	376,886,582	409,789,230	+32,902,648	+8.73
All industries, . . . . .	\$869,872,113	\$945,193,889	+\$75,321,776	+8.66

It will be noted from the above figures that each of the nine leading industries, except Leather, shows an increase in value of goods made in 1902 as compared with 1901, the percentages of increase being as follows: Boots and Shoes, 4.02; Carpetings, 28.73; Cotton Goods, 10.71; Machines and Machinery, 7.01; Metals and Metallic Goods, 4.27; Paper, 12.69; Woollen Goods, 17.66; and Worsted Goods, 19.14. The decrease shown for the leather industry amounted to 7.29 per cent.

Considering the value of stock and materials used in connection with the value of goods made and work done in the nine leading industries, we present the following table :

INDUSTRIES.	PERCENTAGES OF INCREASE (+) OR DECREASE (—) IN 1902, IN THE VALUE OF —	
	Stock Used	Goods Made
Boots and shoes, . . . . .	+3.07	+4.02
Carpetings, . . . . .	+38.74	+28.73
Cotton goods, . . . . .	+4.79	+10.71
Leather, . . . . .	—2.89	—7.29
Machines and machinery, . . . . .	+10.70	+7.01
Metals and metallic goods, . . . . .	+3.02	+4.27
Paper, . . . . .	+12.23	+12.69
Woollen goods, . . . . .	+17.28	+17.66
Worsted goods, . . . . .	+11.86	+19.14

Increase in value of stock used is uniformly accompanied by corresponding increase in the value of goods made for the industries shown in the above table, the only exception being Leather which shows a decrease for both points, namely, 2.89 per cent in cost of stock or materials used, and 7.29 per cent in the value of goods produced.

It may be interesting to note, in connection with this subject, the distribution of the product as regards private firms, corporations, and combinations. The following table exhibits the facts for 1901 and 1902:

CLASSIFICATION.	VALUE OF GOODS MADE		INCREASE IN 1902	
	1901	1902	Amounts	Percentages
Private firms, . . . . .	\$255,118,221	\$261,068,196	+\$5,949,975	+2.33
Corporations, . . . . .	531,946,659	594,112,374	+62,165,715	+11.69
Industrial combinations, . . . . .	82,807,233	90,013,319	+7,206,086	+8.70
ALL INDUSTRIES, . . . . .	\$869,872,113	\$945,193,889	+\$75,321,776	+8.66

Of the 4,658 establishments entering into the comparison, the private firms, which in 1901 controlled 3,236 of the total number, produced goods to the amount of \$255,118,221; the corporations, which controlled 1,342 of the establishments, produced goods amounting to \$531,946,659, and the industrial combinations, controlling 80 of the establishments, show a product value of \$82,807,233.

For 1902 the value of goods produced by private firms, 3,158 in number, amounted to \$261,068,196, an increase over the

former year of 2.33 per cent; the corporations, numbering 1,415, exhibit a product value of \$594,112,374, a gain over 1901 of 11.69 per cent; and the industrial combinations, 85 in number, produced goods to the value of \$90,013,319, an increase of 8.70 per cent over the former year. The entire product value for All Industries for 1902, as has been stated, was \$945,193,889; the private firms, corporations, and combinations turning out, respectively, 27.62, 62.86, and 9.52 per cent of the total.

### Labor and its Compensation.

The presentations on pages 68 to 86 cover the entire subjects of persons employed and wages paid, and are arranged as follows :

1. Average number of males and females, by industries, for 1901 and 1902.

2. Average number of persons employed, both sexes, with increase or decrease in numbers and percentages.

3. Average number of persons employed in connection with the persons employed at periods of employment of smallest number, and persons employed at periods of employment of greatest number, the term "periods of employment of smallest and greatest number" being the time in each industry when the smallest and greatest number, respectively, was employed.

4. The range of employment and unemployment as shown by the excess of greatest over smallest number of persons employed, for each industry, with increase or decrease in 1902 as compared with 1901 in numbers and percentages.

5. Percentages of employment and unemployment, month by month, for the nine leading industries and for All Industries, for 1901 and 1902, with the total number of persons employed, both sexes, during the months specified.

6. The total amount paid in wages, by industries, for 1901 and 1902, with increase or decrease in amounts and percentages in the later as compared with the earlier year.

7. Average yearly earnings for the 80 classified industries and for All Industries, for 1901 and 1902, with increase or decrease in amounts and percentages.

8. Classified weekly wages showing the number of persons, males, females, and those under 21 years of age, receiving certain specified amounts per week ranging from under \$5 to \$20 and over, for the nine leading industries and for All Industries.

## AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND INDUSTRIES.

**1901, 1902.**

[In this presentation, the average number of males, females, and both sexes for each industry are shown. The total number of establishments is 4,658. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	1901			1902		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Agricultural implements, . . . . .	663	-	663	745	-	745
Arms and ammunition, . . . . .	2,866	128	2,494	2,741	139	2,880
Artisans' tools, . . . . .	2,741	49	2,790	3,096	69	3,165
Awnings, sails, tents, etc., . . . . .	219	85	304	228	91	319
Bicycles, tricycles, etc., . . . . .	548	6	554	656	6	662
Boots and shoes, . . . . .	40,964	18,818	59,782	41,924	19,300	61,224
Boots and shoes (factory product), . . . . .	37,076	16,803	53,879	38,043	17,250	55,293
Soles, heels, and cut stock, . . . . .	3,243	1,257	4,500	3,287	1,278	4,565
Boot and shoe findings, . . . . .	510	497	1,007	432	448	880
Stitching, heeling, etc., . . . . .	135	261	396	162	324	486
Boxes, barrels, kegs, etc., . . . . .	3,055	474	3,529	3,203	469	3,672
Boxes (paper), . . . . .	736	1,792	2,528	784	1,770	2,554
Brick, tiles, and sewer pipe, . . . . .	1,518	7	1,525	1,644	11	1,655
Brooms, brushes, and mops, . . . . .	509	512	1,021	582	648	1,230
Building materials, . . . . .	1,203	4	1,207	1,226	6	1,232
Burial cases, caskets, coffins, etc., . . . . .	178	21	199	185	22	207
Buttons and dress trimmings, . . . . .	286	465	751	324	506	830
Carpets, . . . . .	2,280	2,298	4,578	2,670	2,536	5,206
Carriages and wagons, . . . . .	1,862	19	1,881	1,962	22	1,984
Cement, kaolin, lime, and plaster, . . . . .	169	-	169	199	-	199
Chemical preparations (compounded), . . . . .	560	8	568	596	3	599
Clocks and watches, . . . . .	1,252	1,633	2,885	1,391	1,775	3,166
Clothing, . . . . .	3,398	7,588	10,986	3,609	7,857	11,466
Cooking, lighting, and heating apparatus, . . . . .	1,858	11	1,869	1,976	13	1,989
Cordage and twine, . . . . .	1,351	947	2,298	1,515	1,053	2,568
Cotton goods, . . . . .	46,761	43,153	89,914	49,012	44,790	93,802
Cotton goods (woven), . . . . .	41,048	37,577	78,625	42,653	38,739	81,392
Cotton yarn and thread, . . . . .	5,460	5,436	10,896	6,101	5,905	12,006
Cotton waste, . . . . .	253	140	393	258	146	404
Crayons, pencils, crucibles, etc., . . . . .	57	46	103	54	49	103
Drugs and medicines, . . . . .	456	412	868	450	378	828
Dyestuffs, . . . . .	95	21	116	106	16	122
Earthen, plaster, and stone ware, . . . . .	181	36	217	190	36	226
Electrical apparatus and appliances, . . . . .	4,408	969	5,377	5,201	1,161	6,362
Electroplating, . . . . .	111	11	122	85	11	96
Emery and sand paper and cloth, etc., . . . . .	310	5	315	357	5	362
Fancy articles, etc., . . . . .	234	291	525	224	347	571
Fertilizers, . . . . .	214	-	214	358	-	358
Fine arts and taxidermy, . . . . .	23	1	24	21	1	22
Fireworks and matches, . . . . .	78	24	102	62	20	82
Flax, hemp, and jute goods, . . . . .	1,470	1,670	3,140	1,534	1,732	3,266

**AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND INDUSTRIES—1901, 1902—Concluded.**

INDUSTRIES.	1901			1902		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Food preparations, . . . . .	7,002	3,283	10,285	6,949	3,623	10,572
Furniture, . . . . .	5,209	792	6,001	5,660	1,029	6,689
Glass, . . . . .	268	16	284	288	14	302
Glue, isinglass, and starch, . . . . .	215	34	249	224	32	256
Hair work (animal and human), . . . . .	89	53	142	79	47	126
Hose and belting: rubber, linen, etc., . . . . .	43	51	94	44	60	104
Hosiery and knit goods, . . . . .	2,037	4,645	6,682	2,100	5,333	7,433
Ink, mucilage, and paste, . . . . .	44	52	96	47	56	103
Ivory, bone, shell, and horn goods, etc., . . . . .	979	208	1,187	1,167	234	1,401
Jewelry, . . . . .	3,583	2,014	5,597	3,637	2,079	5,716
Leather, . . . . .	6,443	74	6,517	6,295	72	6,367
Leather goods, . . . . .	1,037	291	1,328	1,061	306	1,367
Liquors (bottled) and carbonated beverages, . . . . .	229	6	235	212	7	219
Liquors (malt), . . . . .	1,679	—	1,579	1,404	—	1,404
Liquors (distilled), . . . . .	35	—	35	36	—	36
Lumber, . . . . .	799	5	804	838	6	844
Machines and machinery, . . . . .	27,033	351	27,384	29,113	415	29,528
Metals and metallic goods, . . . . .	20,443	1,809	22,252	21,204	1,848	23,052
Models, lasts, and patterns, . . . . .	642	7	649	634	7	641
Musical instruments and materials, . . . . .	3,019	272	3,291	3,418	299	3,717
Oils and illuminating fluids, . . . . .	128	9	137	120	9	129
Paints, colors, and crude chemicals, . . . . .	303	20	323	311	21	332
Paper, . . . . .	5,930	3,661	9,591	6,424	3,967	10,391
Paper goods, . . . . .	1,395	1,491	2,886	1,478	1,575	3,053
Perfumes, toilet articles, etc., . . . . .	10	19	29	11	19	30
Photographs and photographic materials, . . . . .	109	99	208	127	97	224
Polishes and dressing, . . . . .	170	187	357	189	230	419
Printing, publishing, and bookbinding, . . . . .	3,027	1,816	4,843	3,223	1,900	5,123
Print works, dye works, and bleacheries, . . . . .	5,520	1,273	6,793	6,043	1,447	7,490
Railroad construction and equipment, . . . . .	2,820	2	2,822	3,294	2	3,296
Rubber and elastic goods, . . . . .	6,725	4,128	10,853	7,450	4,704	12,154
Saddlery and harness, . . . . .	280	105	385	338	155	493
Scientific instruments and appliances, . . . . .	1,297	408	1,705	1,561	486	2,047
Shipbuilding, . . . . .	1,068	—	1,068	935	—	935
Silk and silk goods, . . . . .	929	1,587	2,516	1,021	1,784	2,805
Sporting and athletic goods, . . . . .	306	174	480	372	219	591
Stone, . . . . .	4,542	—	4,542	4,659	—	4,659
Quarried, . . . . .	2,276	—	2,276	2,345	—	2,345
Cut and monumental, . . . . .	2,266	—	2,266	2,314	—	2,314
Straw and palm leaf goods, . . . . .	1,021	1,783	2,804	1,146	1,738	2,884
Tallow, candles, soap, and grease, . . . . .	730	92	822	798	86	884
Tobacco, snuff, and cigars, . . . . .	1,757	741	2,498	1,845	765	2,610
Toys and games (children's), . . . . .	498	122	620	540	159	699
Trunks and valises, . . . . .	67	11	78	75	12	87
Whips, lashes, and stocks, . . . . .	447	156	603	522	183	705
Wooden goods, . . . . .	1,417	97	1,514	1,454	91	1,545
Woollen goods, . . . . .	13,957	7,989	21,946	15,754	8,765	24,519
Woven goods and yarn, . . . . .	13,278	7,913	21,191	15,003	8,675	23,678
Shoddy, waste, etc., . . . . .	679	76	755	751	90	841
Worsted goods, . . . . .	9,258	7,244	16,502	10,515	8,533	19,048
ALL INDUSTRIES, . . . . .	266,553	128,681	395,234	283,525	137,256	420,781



# AVERAGE NUMBER OF PERSONS EMPLOYED — BOTH SEXES: BY INDUSTRIES.

1901, 1902.

[In this presentation, the average number of persons employed is brought forward from the column "Both Sexes" in the preceding table. The increases or decreases in 1902 as compared with 1901 are given in numbers and percentages. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	AVERAGE NUMBER OF PERSONS EMPLOYED: BOTH SEXES		INCREASE (+) OR DECREASE (—) IN 1902	
	1901	1902	Number	Percentages
Agricultural implements, . . . . .	663	745	+82	+12.37
Arms and ammunition, . . . . .	2,494	2,880	+386	+15.48
Artisans' tools, . . . . .	2,790	3,165	+375	+13.44
Awning, sails, tents, etc., . . . . .	304	319	+15	+4.93
Bicycles, tricycles, etc., . . . . .	554	662	+108	+19.49
Boots and shoes, . . . . .	59,782	61,224	+1,442	+2.41
Boots and shoes (factory product), . . . . .	53,879	55,293	+1,414	+2.62
Soles, heels, and cut stock, . . . . .	4,500	4,565	+65	+1.44
Boot and shoe findings, . . . . .	1,007	880	-127	-12.61
Stitching, heeling, etc., . . . . .	396	486	+90	+22.73
Boxes, barrels, kegs, etc., . . . . .	3,529	3,672	+143	+4.05
Boxes (paper), . . . . .	2,523	2,554	+26	+1.03
Brick, tiles, and sewer pipe, . . . . .	1,525	1,655	+130	+8.52
Brooms, brushes, and mops, . . . . .	1,021	1,230	+209	+20.47
Building materials, . . . . .	1,207	1,232	+25	+2.07
Burial cases, caskets, coffins, etc., . . . . .	199	207	+8	+4.02
Buttons and dress trimmings, . . . . .	751	830	+79	+10.52
Carpetings, . . . . .	4,578	5,206	+628	+13.72
Carriages and wagons, . . . . .	1,851	1,984	+103	+5.48
Cement, kaolin, lime, and plaster, . . . . .	169	199	+30	+17.75
Chemical preparations (compounded), . . . . .	568	599	+31	+5.46
Clocks and watches, . . . . .	2,885	3,166	+281	+9.74
Clothing, . . . . .	10,986	11,466	+480	+4.37
Cooking, lighting, and heating apparatus, . . . . .	1,869	1,989	+120	+6.42
Cordage and twine, . . . . .	2,298	2,568	+270	+11.75
Cotton goods, . . . . .	89,914	95,802	+5,888	+6.52
Cotton goods (woven), . . . . .	78,625	81,392	+2,767	+3.52
Cotton yarn and thread, . . . . .	10,896	12,006	+1,110	+10.19
Cotton waste, . . . . .	393	404	+11	+2.80
Crayons, pencils, crucibles, etc., . . . . .	103	103	*=	*=
Drugs and medicines, . . . . .	865	828	-40	-4.61
Dyestuffs, . . . . .	116	122	+6	+5.17
Earthen, plaster, and stone ware, . . . . .	217	226	+9	+4.15
Electrical apparatus and appliances, . . . . .	5,377	6,362	+985	+18.32
Electroplating, . . . . .	122	96	-26	-21.31
Emery and sand paper and cloth, etc., . . . . .	315	362	+47	+14.92
Fancy articles, etc., . . . . .	525	571	+46	+8.76
Fertilizers, . . . . .	214	358	+144	+67.29
Fine arts and taxidermy, . . . . .	24	22	-2	-8.33
Fireworks and matches, . . . . .	102	82	-20	-19.61
Flax, hemp, and jute goods, . . . . .	3,140	3,266	+126	+4.01

\* No change.

**AVERAGE NUMBER OF PERSONS EMPLOYED—BOTH SEXES:  
BY INDUSTRIES—1901, 1902—Concluded.**

INDUSTRIES.	AVERAGE NUMBER OF PERSONS EMPLOYED: BOTH SEXES		INCREASE (+) OR DECREASE (−) IN 1902	
	1901	1902	Number	Percentages
Food preparations, . . . . .	10,285	10,572	+287	+2.79
Furniture, . . . . .	6,001	6,689	+688	+11.46
Glass, . . . . .	284	302	+18	+6.34
Glue, isinglass, and starch, . . . . .	249	256	+7	+2.81
Hair work (animal and human), . . . . .	142	126	−16	−11.27
Hose and belting: rubber, linen, etc., . . . . .	94	104	+10	+10.64
Hosiery and knit goods, . . . . .	6,682	7,433	+751	+11.24
Ink, mucilage, and paste, . . . . .	96	103	+7	+7.29
Ivory, bone, shell, and horn goods, etc., . . . . .	1,187	1,401	+214	+18.03
Jewelry, . . . . .	5,597	5,716	+119	+2.13
Leather, . . . . .	6,517	6,367	−150	−2.30
Leather goods, . . . . .	1,328	1,367	+39	+2.94
Liquors (bottled) and carbonated beverages, . . . . .	235	219	−16	−6.81
Liquors (malt), . . . . .	1,579	1,404	−175	−11.08
Liquors (distilled), . . . . .	35	36	+1	+2.86
Lumber, . . . . .	804	844	+40	+4.98
Machines and machinery, . . . . .	27,384	29,528	+2,144	+7.83
Metals and metallic goods, . . . . .	22,252	23,052	+800	+3.60
Models, lasts, and patterns, . . . . .	649	641	−8	−1.23
Musical instruments and materials, . . . . .	3,291	3,717	+426	+12.94
Oils and illuminating fluids, . . . . .	137	129	−8	−5.84
Paints, colors, and crude chemicals, . . . . .	323	332	+9	+2.79
Paper, . . . . .	9,591	10,391	+800	+8.34
Paper goods, . . . . .	2,888	3,053	+167	+5.79
Perfumes, toilet articles, etc., . . . . .	29	30	+1	+3.45
Photographs and photographic materials, . . . . .	208	224	+16	+7.69
Polishes and dressing, . . . . .	357	419	+62	+17.37
Printing, publishing, and bookbinding, . . . . .	4,843	5,123	+280	+5.78
Print works, dye works, and bleacheries, . . . . .	6,793	7,490	+697	+10.26
Railroad construction and equipment, . . . . .	2,822	3,296	+474	+16.80
Rubber and elastic goods, . . . . .	10,853	12,154	+1,301	+11.99
Saddlery and harness, . . . . .	385	493	+108	+28.31
Scientific instruments and appliances, . . . . .	1,705	2,047	+342	+20.06
Shipbuilding, . . . . .	1,068	935	−133	−12.45
Silk and silk goods, . . . . .	2,516	2,805	+289	+11.49
Sporting and athletic goods, . . . . .	480	591	+111	+23.13
Stone, . . . . .	4,542	4,659	+117	+2.58
Quarried, . . . . .	2,276	2,345	+69	+3.03
Cut and monumental, . . . . .	2,266	2,314	+48	+2.12
Straw and palm leaf goods, . . . . .	2,804	2,884	+80	+2.85
Tallow, candles, soap, and grease, . . . . .	822	884	+62	+7.54
Tobacco, snuff, and cigars, . . . . .	2,498	2,610	+112	+4.48
Toys and games (children's), . . . . .	620	699	+79	+12.74
Trunks and valises, . . . . .	78	87	+9	+11.54
Whips, lashes, and stocks, . . . . .	603	705	+102	+16.92
Wooden goods, . . . . .	1,514	1,545	+31	+2.05
Woollen goods, . . . . .	21,946	24,519	+2,573	+11.72
Woven goods and yarn, . . . . .	21,191	23,678	+2,487	+11.74
Shoddy, waste, etc., . . . . .	755	841	+86	+11.39
Worsted goods, . . . . .	16,502	19,048	+2,546	+15.43
ALL INDUSTRIES, . . . . .	395,234	420,781	+25,547	+6.46

# SMALLEST, GREATEST, AND AVERAGE NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES.

1901, 1902.

[This presentation shows the average number of persons employed, and the number of persons employed at periods of employment of smallest and greatest number, respectively. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	1901			1902		
	Average Number	Small- est Number	Greatest Number	Average Number	Small- est Number	Greatest Number
Agricultural implements, . . . . .	663	567	744	745	638	825
Arms and ammunition, . . . . .	2,494	1,788	2,919	2,880	2,331	3,099
Artisans' tools, . . . . .	2,790	2,567	3,003	3,165	2,903	3,456
Awnings, sails, tents, etc., . . . . .	304	208	420	319	248	418
Bicycles, tricycles, etc., . . . . .	554	282	949	662	455	866
Boots and shoes, . . . . .	59,782	48,681	69,863	61,224	49,898	71,485
Boots and shoes (factory product), . . . . .	53,879	43,812	62,914	55,293	45,008	64,466
Soles, heels, and cut stock, . . . . .	4,500	3,736	5,303	4,565	3,778	5,373
Boot and shoe findings, . . . . .	1,007	821	1,166	880	719	1,057
Stitching, heelings, etc., . . . . .	396	312	480	486	393	589
Boxes, barrels, kegs, etc., . . . . .	3,529	3,129	3,949	3,672	3,215	4,128
Boxes (paper), . . . . .	2,528	2,172	3,008	2,554	2,161	3,066
Brick, tiles, and sewer pipe, . . . . .	1,525	679	2,680	1,655	786	2,868
Brooms, brushes, and mops, . . . . .	1,021	927	1,145	1,230	1,083	1,361
Building materials, . . . . .	1,207	985	1,464	1,232	1,021	1,474
Burial cases, caskets, coffins, etc., . . . . .	199	188	214	207	191	219
Buttons and dress trimmings, . . . . .	751	583	879	830	636	1,020
Carpetings, . . . . .	4,578	4,326	4,858	5,206	4,909	5,378
Carriages and wagons, . . . . .	1,881	1,506	2,232	1,984	1,571	2,370
Cement, kaolin, lime, and plaster, . . . . .	169	121	210	199	168	238
Chemical preparations (compounded), . . . . .	568	503	673	599	557	673
Clocks and watches, . . . . .	2,885	2,728	3,028	3,166	3,029	3,316
Clothing, . . . . .	10,986	8,820	12,615	11,466	9,230	13,022
Cooking, lighting, and heating apparatus, . . . . .	1,869	1,662	2,069	1,989	1,690	2,206
Cordage and twine, . . . . .	2,298	1,864	2,656	2,568	2,343	2,809
Cotton goods, . . . . .	89,914	80,616	95,830	93,802	89,635	97,876
Cotton goods (woven), . . . . .	78,625	70,570	82,895	81,392	78,341	83,881
Cotton yarn and thread, . . . . .	10,896	9,668	12,526	12,006	10,916	13,567
Cotton waste, . . . . .	393	378	409	404	378	428
Crayons, pencils, crucibles, etc., . . . . .	103	81	124	103	76	168
Drugs and medicines, . . . . .	868	595	1,261	828	590	1,167
Dyestuffs, . . . . .	116	63	149	122	78	148
Earthen, plaster, and stone ware, . . . . .	217	176	252	226	209	251
Electrical apparatus and appliances, . . . . .	5,377	4,667	5,994	6,362	5,488	7,123
Electroplating, . . . . .	122	103	147	96	77	120
Emery and sand paper and cloth, etc., . . . . .	315	276	342	362	312	393
Fancy articles, etc., . . . . .	525	293	786	571	318	923
Fertilizers, . . . . .	214	188	281	358	291	463
Fine arts and taxidermy, . . . . .	24	23	28	22	21	25
Fireworks and matches, . . . . .	102	71	127	82	52	114
Flax, hemp, and jute goods, . . . . .	3,140	2,990	3,263	3,266	3,173	3,361

**SMALLEST, GREATEST, AND AVERAGE NUMBER OF PERSONS  
EMPLOYED: BY INDUSTRIES — 1901, 1902 — Concluded.**

INDUSTRIES.	1901			1902		
	Average Number	Small- est Number	Greatest Number	Average Number	Small- est Number	Greatest Number
Food preparations, . . . . .	10,285	8,463	12,450	10,572	8,641	13,108
Furniture, . . . . .	6,001	4,966	6,923	6,689	5,685	7,609
Glass, . . . . .	284	180	330	302	263	360
Glue, isinglass, and starch, . . . . .	249	227	402	256	199	395
Hair work (animal and human), . . . . .	142	126	162	126	116	158
Hose and belting: rubber, linen, etc., . . . . .	94	75	99	104	94	110
Hosiery and knit goods, . . . . .	6,682	5,995	7,370	7,433	6,817	8,146
Ink, mucilage, and paste, . . . . .	96	72	128	103	93	118
Ivory, bone, shell, and horn goods, etc., . . . . .	1,187	983	1,435	1,401	1,232	1,568
Jewelry, . . . . .	5,597	4,474	6,977	5,716	4,658	6,939
Leather, . . . . .	6,517	5,523	7,409	6,367	5,288	7,509
Leather goods, . . . . .	1,328	1,118	1,621	1,367	1,200	1,569
Liquors (bottled) and carbonated beverages, . . . . .	235	169	348	219	162	324
Liquors (malt), . . . . .	1,579	1,475	1,693	1,404	1,110	1,710
Liquors (distilled), . . . . .	35	34	37	36	35	39
Lumber, . . . . .	804	638	955	844	643	1,058
Machines and machinery, . . . . .	27,384	23,202	31,600	29,528	24,947	33,600
Metals and metallic goods, . . . . .	22,252	19,170	24,996	23,052	20,340	25,888
Models, lasts, and patterns, . . . . .	649	535	781	641	538	775
Musical instruments and materials, . . . . .	3,291	2,971	3,652	3,717	3,366	4,089
Oils and illuminating fluids, . . . . .	137	116	153	129	123	140
Paints, colors, and crude chemicals, . . . . .	323	290	349	332	293	365
Paper, . . . . .	9,591	8,296	10,593	10,391	9,569	11,207
Paper goods, . . . . .	2,886	2,541	3,236	3,053	2,781	3,350
Perfumes, toilet articles, etc., . . . . .	29	24	36	30	25	35
Photographs and photographic materials, . . . . .	208	168	240	224	193	256
Polishes and dressing, . . . . .	357	271	428	419	308	480
Printing, publishing, and bookbinding, . . . . .	4,843	4,358	5,301	5,123	4,561	5,582
Print works, dye works, and bleacheries, . . . . .	6,793	6,050	7,472	7,490	6,593	8,171
Railroad construction and equipment, . . . . .	2,822	2,550	3,068	3,296	2,885	3,629
Rubber and elastic goods, . . . . .	10,853	9,630	12,424	12,154	9,613	13,193
Saddlery and harness, . . . . .	385	330	472	493	431	545
Scientific instruments and appliances, . . . . .	1,705	1,547	1,910	2,047	1,846	2,208
Shipbuilding, . . . . .	1,068	637	1,599	935	661	1,311
Silk and silk goods, . . . . .	2,516	2,373	2,707	2,805	2,603	2,972
Sporting and athletic goods, . . . . .	480	299	636	591	418	714
Stone, . . . . .	4,542	3,204	5,956	4,659	2,801	5,990
Quarried, . . . . .	2,276	1,502	3,107	2,345	1,053	3,143
Cut and monumental, . . . . .	2,266	1,702	2,849	2,314	1,748	2,847
Straw and palm leaf goods, . . . . .	2,804	801	4,639	2,884	964	4,635
Tallow, candles, soap, and grease, . . . . .	822	743	894	884	803	983
Tobacco, snuff, and cigars, . . . . .	2,498	2,173	2,877	2,610	2,198	2,895
Toys and games (children's), . . . . .	620	423	849	699	419	944
Trunks and valises, . . . . .	78	42	106	87	54	99
Whips, lashes, and stocks, . . . . .	603	520	684	705	633	774
Wooden goods, . . . . .	1,514	1,307	1,753	1,545	1,342	1,779
Woollen goods, . . . . .	21,946	18,612	24,470	24,519	21,930	26,665
Woven goods and yarn, . . . . .	21,191	17,931	23,495	23,678	21,282	25,628
Shoddy, waste, etc., . . . . .	755	581	975	841	648	1,037
Worsted goods, . . . . .	16,502	13,632	18,634	19,048	16,455	20,866
ALL INDUSTRIES, . . . . .	395,234	335,661	448,986	420,781	365,312	471,289

# RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES.

1901, 1902.

[In this presentation, the excess of greatest over smallest number of persons, as obtained from the table on pages 73 and 74, is shown, and a comparison is made between the two years. The relative increases or decreases in the excess of greatest over smallest number employed in 1902 as compared with 1901 are given with equivalent percentages. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (—) IN 1902	
	1901	1902	Number	Percentages
Agricultural implements, . . . . .	177	187	+10	+5.65
Arms and ammunition, . . . . .	1,131	768	—363	—32.10
Artisans' tools, . . . . .	436	553	+117	+26.83
Awnings, sails, tents, etc., . . . . .	212	170	—42	—19.81
Bicycles, tricycles, etc., . . . . .	667	411	—256	—38.38
Boots and shoes, . . . . .	21,182	21,587	+405	+1.91
Boots and shoes (factory product), . . . . .	19,102	19,458	+356	+1.86
Soles, heels, and cut stock, . . . . .	1,567	1,595	+28	+1.79
Boot and shoe findings, . . . . .	345	338	—7	—2.03
Stitching, heeling, etc., . . . . .	168	196	+28	+16.67
Boxes, barrels, kegs, etc., . . . . .	820	913	+93	+11.34
Boxes (paper), . . . . .	836	905	+69	+8.25
Brick, tiles, and sewer pipe, . . . . .	2,001	2,082	+81	+4.05
Brooms, brushes, and mops, . . . . .	218	278	+60	+27.52
Building materials, . . . . .	479	453	—26	—5.43
Burial cases, caskets, coffins, etc., . . . . .	26	28	+2	+7.69
Buttons and dress trimmings, . . . . .	296	384	+88	+29.73
Carpetings, . . . . .	532	469	—63	—11.84
Carriages and wagons, . . . . .	786	799	+13	+1.65
Cement, kaolin, lime, and plaster, . . . . .	89	70	—19	—21.35
Chemical preparations (compounded), . . . . .	170	116	—54	—31.76
Clocks and watches, . . . . .	300	287	—13	—4.33
Clothing, . . . . .	3,795	3,792	—3	—0.08
Cooking, lighting, and heating apparatus, . . . . .	407	516	+109	+26.78
Cordage and twine, . . . . .	792	466	—326	—41.16
Cotton goods, . . . . .	15,214	8,241	—6,973	—45.83
Cotton goods (woven), . . . . .	12,325	5,540	—6,785	—55.05
Cotton yarn and thread, . . . . .	2,558	2,651	+207	+7.24
Cotton waste, . . . . .	31	50	+19	+61.29
Crayons, pencils, crucibles, etc., . . . . .	43	92	+49	+113.95
Drugs and medicines, . . . . .	666	577	—89	—13.36
Dyestuffs, . . . . .	86	70	—16	—18.60
Earthen, plaster, and stone ware, . . . . .	76	42	—34	—44.74
Electrical apparatus and appliances, . . . . .	1,327	1,635	+308	+23.21
Electroplating, . . . . .	44	43	—1	—2.27
Emery and sand paper and cloth, etc., . . . . .	66	81	+15	+22.73
Fancy articles, etc., . . . . .	493	605	+112	+22.72
Fertilizers, . . . . .	93	172	+79	+84.95
Fine arts and taxidermy, . . . . .	5	4	—1	—20.00
Fireworks and matches, . . . . .	56	62	+6	+10.71
Flax, hemp, and jute goods, . . . . .	273	188	—85	—31.14

RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES — 1901, 1902 — Concluded.

INDUSTRIES.	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (—) IN 1902	
	1901	1902	Number	Percentages
Food preparations, . . . . .	3,987	4,467	+480	+12.04
Furniture, . . . . .	1,957	1,924	—33	—1.69
Glass, . . . . .	150	97	—53	—35.33
Glue, isinglass, and starch, . . . . .	175	196	+21	+12.00
Hair work (animal and human), . . . . .	36	42	+6	+16.67
Hose and belting: rubber, linen, etc., . . . . .	24	16	—8	—33.33
Hosiery and knit goods, . . . . .	1,375	1,329	—46	—3.35
Ink, mucilage, and paste, . . . . .	56	25	—31	—55.36
Ivory, bone, shell, and horn goods, etc., . . . . .	452	336	—116	—25.66
Jewelry, . . . . .	2,503	2,281	—222	—8.87
Leather, . . . . .	1,886	2,221	+335	+17.76
Leather goods, . . . . .	503	369	—134	—26.64
Liquors (bottled) and carbonated beverages, . . . . .	179	162	—17	—9.50
Liquors (malt), . . . . .	218	600	+382	+175.23
Liquors (distilled), . . . . .	3	4	+1	+33.33
Lumber, . . . . .	317	415	+98	+30.91
Machines and machinery, . . . . .	8,398	8,653	+255	+3.04
Metals and metallic goods, . . . . .	5,826	5,548	—278	—4.77
Models, lasts, and patterns, . . . . .	246	237	—9	—3.66
Musical instruments and materials, . . . . .	681	723	+42	+6.17
Oils and illuminating fluids, . . . . .	37	17	—20	—54.05
Paints, colors, and crude chemicals, . . . . .	59	72	+13	+22.03
Paper, . . . . .	2,207	1,938	—269	—25.78
Paper goods, . . . . .	695	569	—126	—18.13
Perfumes, toilet articles, etc., . . . . .	12	10	—2	—16.67
Photographs and photographic materials, . . . . .	72	63	—9	—12.50
Polishes and dressing, . . . . .	157	172	+15	+9.55
Printing, publishing, and bookbinding, . . . . .	943	1,021	+78	+8.27
Print works, dye works, and bleacheries, . . . . .	1,422	1,578	+156	+10.97
Railroad construction and equipment, . . . . .	518	744	+226	+43.63
Rubber and elastic goods, . . . . .	2,794	3,580	+786	+28.13
Saddlery and harness, . . . . .	142	114	—28	—19.72
Scientific instruments and appliances, . . . . .	363	362	—1	—0.28
Shipbuilding, . . . . .	962	650	—312	—32.43
Silk and silk goods, . . . . .	334	369	+35	+10.48
Sporting and athletic goods, . . . . .	337	296	—41	—12.17
Stone, . . . . .	2,752	3,189	+437	+15.88
Quarried, . . . . .	1,605	2,090	+485	+30.22
Cut and monumental, . . . . .	1,147	1,099	—48	—4.18
Straw and palm leaf goods, . . . . .	3,838	3,671	—167	—4.35
Tallow, candles, soap, and grease, . . . . .	151	180	+29	+19.21
Tobacco, snuff, and cigars, . . . . .	704	697	—7	—0.99
Toys and games (children's), . . . . .	426	525	+99	+23.24
Trunks and valises, . . . . .	64	45	—19	—29.69
Whips, lashes, and stocks, . . . . .	164	141	—23	—14.02
Wooden goods, . . . . .	446	437	—9	—2.02
Woollen goods, . . . . .	5,958	4,735	—1,223	—20.53
Woven goods and yarn, . . . . .	5,564	4,346	—1,218	—21.89
Shoddy, waste, etc., . . . . .	394	389	—5	—1.27
Worsted goods, . . . . .	5,002	4,411	—591	—11.82
ALL INDUSTRIES, . . . . .	113,325	105,977	—7,348	—6.48

## PERSONS EMPLOYED — BOTH SEXES. AGGREGATES, BY MONTHS.

### 1901, 1902.

[This presentation shows, for the nine leading industries and for All Industries, the aggregate number of persons employed during each month of the years 1901 and 1902, together with percentages of employment and unemployment based on the month when the greatest number of persons was employed; this greatest number has been considered as 100 per cent and the variations from this percentage month by month indicate the fluctuations in employment. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included. Considerations of space have led to the curtailment of the presentation to the nine leading industries, but the figures in detail for any of the 80 classified industries may be obtained upon application to this Department.]

INDUSTRIES AND MONTHS.	1901			1902		
	Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —		Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —	
		Em- ployment	Unem- ployment		Em- ployment	Unem- ployment
<i>Boots and Shoes.</i>						
January, . . . . .	57,800	93.29	6.71	61,396	96.75	3.25
February, . . . . .	58,718	94.78	5.22	61,856	97.47	2.53
March, . . . . .	59,927	96.73	3.27	61,232	96.49	3.51
April, . . . . .	58,614	94.61	5.39	60,051	94.63	5.37
May, . . . . .	58,500	94.42	5.58	58,692	92.49	7.51
June, . . . . .	57,539	92.87	7.13	57,158	90.07	9.93
July, . . . . .	57,898	93.45	6.55	59,006	92.98	7.02
August, . . . . .	60,952	98.38	1.62	61,712	97.24	2.76
September, . . . . .	61,663	99.53	0.47	63,086	99.41	0.59
October, . . . . .	61,388	99.08	0.92	63,461	100.00	—
November, . . . . .	61,955	100.00	—	63,289	99.73	0.27
December, . . . . .	61,676	99.55	0.45	63,038	99.33	0.67
<i>Carpetings.</i>						
January, . . . . .	4,614	96.02	3.98	5,061	95.19	4.81
February, . . . . .	4,600	95.73	4.27	5,140	96.67	3.33
March, . . . . .	4,500	93.65	6.35	5,188	97.57	2.43
April, . . . . .	4,363	90.80	9.20	5,153	96.92	3.08
May, . . . . .	4,473	93.09	6.91	5,199	97.78	2.22
June, . . . . .	4,534	94.36	5.64	5,305	99.77	0.23
July, . . . . .	4,568	95.07	4.93	5,317	100.00	—
August, . . . . .	4,512	93.90	6.10	5,314	99.94	0.06
September, . . . . .	4,593	95.59	4.41	5,313	99.92	0.08
October, . . . . .	4,693	97.67	2.33	5,282	99.34	0.66
November, . . . . .	4,678	97.36	2.64	5,147	96.80	3.20
December, . . . . .	4,805	100.00	—	5,064	95.24	4.76
<i>Cotton Goods.</i>						
January, . . . . .	91,376	97.41	2.59	93,598	98.17	1.83
February, . . . . .	91,262	97.29	2.71	93,497	98.06	1.94
March, . . . . .	91,496	97.54	2.46	95,983	99.72	0.28
April, . . . . .	85,756	91.42	8.58	93,753	98.33	1.67
May, . . . . .	88,014	93.83	6.17	94,919	99.55	0.45
June, . . . . .	88,355	94.19	5.81	93,342	97.90	2.10
July, . . . . .	87,287	93.05	6.95	92,793	97.32	2.68
August, . . . . .	88,767	94.63	5.37	92,868	97.40	2.60
September, . . . . .	89,174	95.06	4.94	92,515	97.03	2.97
October, . . . . .	90,427	96.40	3.60	93,892	98.47	1.53
November, . . . . .	93,805	100.00	—	95,347	100.00	—
December, . . . . .	93,180	99.33	0.67	93,861	98.44	1.56

PERSONS EMPLOYED—BOTH SEXES. AGGREGATES, BY MONTHS  
—1901, 1902—Continued.

INDUSTRIES AND MONTHS.	1901			1902		
	Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF—		Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF—	
		Em- ployment	Unem- ployment		Em- ployment	Unem- ployment
<i>Leather.</i>						
January, . . . . .	6,307	91.58	8.42	6,910	100.00	-
February, . . . . .	6,334	91.97	8.03	6,781	98.13	1.87
March, . . . . .	6,407	93.03	6.97	6,595	95.44	4.56
April, . . . . .	6,362	92.38	7.62	6,341	91.77	8.23
May, . . . . .	6,432	93.39	6.61	6,225	90.09	9.91
June, . . . . .	6,476	94.03	5.97	6,072	87.87	12.13
July, . . . . .	6,467	93.90	6.10	5,898	85.35	14.65
August, . . . . .	6,561	95.27	4.73	6,094	88.19	11.81
September, . . . . .	6,542	94.99	5.01	6,156	89.09	10.91
October, . . . . .	6,672	96.88	3.12	6,229	90.14	9.86
November, . . . . .	6,745	97.94	2.06	6,468	93.60	6.40
December, . . . . .	6,887	100.00	-	6,606	95.60	4.40
<i>Machines and Machinery.</i>						
January, . . . . .	28,892	100.00	-	27,157	86.82	13.18
February, . . . . .	28,276	97.87	2.13	27,339	87.40	12.60
March, . . . . .	27,645	95.68	4.32	28,037	89.64	10.36
April, . . . . .	27,367	94.72	5.28	28,629	91.53	8.47
May, . . . . .	26,725	92.50	7.50	28,860	92.27	7.73
June, . . . . .	25,995	89.97	10.03	29,276	93.60	6.40
July, . . . . .	26,490	91.69	8.31	29,948	95.74	4.26
August, . . . . .	27,012	93.49	6.51	30,575	97.75	2.25
September, . . . . .	27,404	94.85	5.15	30,841	98.60	1.40
October, . . . . .	27,600	95.53	4.47	31,060	99.30	0.70
November, . . . . .	27,536	95.31	4.69	31,279	100.00	-
December, . . . . .	27,495	95.16	4.84	31,137	99.55	0.45
<i>Metals and Metallic Goods.</i>						
January, . . . . .	21,276	92.05	7.95	22,770	97.47	2.53
February, . . . . .	21,415	92.65	7.35	23,048	98.66	1.34
March, . . . . .	21,553	93.25	6.75	23,352	99.96	0.04
April, . . . . .	22,093	95.59	4.41	23,355	99.97	0.03
May, . . . . .	22,304	96.50	3.50	23,350	99.95	0.05
June, . . . . .	22,139	96.00	4.00	23,150	99.09	0.91
July, . . . . .	21,840	94.49	5.51	22,660	97.00	3.00
August, . . . . .	22,290	96.44	3.56	22,165	94.88	5.12
September, . . . . .	22,766	98.50	1.50	22,815	97.66	2.34
October, . . . . .	23,113	100.00	-	23,224	99.41	0.59
November, . . . . .	22,963	99.35	0.65	23,362	100.00	-
December, . . . . .	22,904	99.10	0.90	23,086	98.82	1.18
<i>Paper.</i>						
January, . . . . .	9,287	92.51	7.49	10,231	93.63	6.37
February, . . . . .	9,441	94.04	5.96	10,207	93.41	6.59
March, . . . . .	9,519	94.82	5.18	10,321	94.45	5.55
April, . . . . .	9,536	94.99	5.01	10,346	94.68	5.32
May, . . . . .	9,617	95.80	4.20	10,332	94.55	5.45
June, . . . . .	8,981	89.46	10.54	10,267	93.96	6.04
July, . . . . .	9,454	94.17	5.83	9,973	91.27	8.73
August, . . . . .	9,526	94.89	5.11	10,221	93.54	6.46
September, . . . . .	9,803	97.65	2.35	10,403	95.20	4.80
October, . . . . .	9,879	98.41	1.59	10,681	97.75	2.25
November, . . . . .	9,956	99.17	0.83	10,791	98.76	1.24
December, . . . . .	10,039	100.00	-	10,927	100.00	-
<i>Woollen Goods.</i>						
January, . . . . .	21,199	92.12	7.88	23,533	92.72	7.28
February, . . . . .	21,104	91.70	8.30	23,788	93.72	6.28
March, . . . . .	21,690	94.25	5.75	24,014	94.61	5.39
April, . . . . .	21,726	94.41	5.59	24,206	95.37	4.63
May, . . . . .	21,626	93.97	6.03	24,243	95.51	4.49
June, . . . . .	21,904	95.18	4.82	24,351	96.06	3.94
July, . . . . .	22,281	96.82	3.18	24,492	96.49	3.51
August, . . . . .	20,933	90.96	9.04	24,481	96.45	3.55
September, . . . . .	22,235	96.62	3.38	24,968	98.37	1.63
October, . . . . .	22,770	98.94	1.06	25,359	99.91	0.09
November, . . . . .	22,694	98.61	1.39	25,164	99.14	0.86
December, . . . . .	23,013	100.00	-	25,382	100.00	-



PERSONS EMPLOYED — BOTH SEXES. AGGREGATES, BY MONTHS  
— 1901, 1902 — Concluded.

INDUSTRIES AND MONTHS.	1901			1902		
	Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —		Number of Persons Employed in Estab- lishments Con- sidered	PERCENTAGES OF —	
		Em- ployment	Unem- ployment		Em- ployment	Unem- ployment
<i>Worsted Goods.</i>						
January, . . . . .	14,182	77.78	22.22	18,843	94.27	5.73
February, . . . . .	14,843	81.41	18.59	19,010	95.11	4.89
March, . . . . .	15,720	86.22	13.78	19,430	97.21	2.79
April, . . . . .	16,424	90.08	9.92	18,174	90.92	9.08
May, . . . . .	16,748	91.86	8.14	17,933	89.72	10.28
June, . . . . .	16,772	91.99	8.01	18,552	92.82	7.18
July, . . . . .	16,580	90.93	9.07	18,763	93.87	6.13
August, . . . . .	16,714	91.67	8.33	19,046	95.29	4.71
September, . . . . .	17,100	93.79	6.21	19,372	96.92	3.08
October, . . . . .	17,634	96.71	3.29	19,731	98.71	1.29
November, . . . . .	18,233	100.00	—	19,988	100.00	—
December, . . . . .	17,102	93.80	6.20	19,747	98.79	1.21
<i>ALL INDUSTRIES.</i>						
January, . . . . .	386,981	94.00	6.00	421,162	95.74	4.26
February, . . . . .	388,922	94.47	5.53	422,343	96.01	3.99
March, . . . . .	393,847	95.67	4.33	426,403	96.93	3.07
April, . . . . .	385,400	93.62	6.38	422,002	95.93	4.07
May, . . . . .	390,794	94.93	5.07	423,314	96.23	3.77
June, . . . . .	387,508	94.13	5.87	420,190	95.52	4.48
July, . . . . .	386,195	93.81	6.19	419,795	95.43	4.57
August, . . . . .	391,677	95.14	4.86	421,556	95.83	4.17
September, . . . . .	399,810	97.12	2.88	430,464	97.85	2.15
October, . . . . .	407,041	98.87	1.13	437,666	99.49	0.51
November, . . . . .	411,676	100.00	—	439,908	100.00	—
December, . . . . .	409,293	99.42	0.58	437,203	99.39	0.61

## WAGES PAID: BY INDUSTRIES.

1901, 1902.

[In this presentation, the figures given under "Total Amount Paid in Wages During the Year" represent the returns made by the same establishments in each industry for the years 1901 and 1902. The relative increases or decreases in 1902 are given with equivalent percentages. It should be borne in mind that these figures represent the sums paid to wage earners only, and do not include the amounts paid to officers, clerks, or other salaried persons.]

INDUSTRIES.	TOTAL AMOUNT PAID IN WAGES DURING THE YEAR		INCREASE (+) OR DECREASE (−) IN 1902	
	1901	1902	Amounts	Percent- ages
Agricultural implements, . . . . .	\$324,959	\$392,653	+\$67,694	+20.83
Arms and ammunition, . . . . .	1,288,591	1,615,737	+327,146	+25.39
Artisans' tools, . . . . .	1,508,403	1,755,668	+247,265	+16.39
Awnings, sails, tents, etc., . . . . .	168,581	179,007	+10,426	+6.18
Bicycles, tricycles, etc., . . . . .	308,062	368,611	+60,549	+19.65
Boots and shoes, . . . . .	29,008,218	30,090,845	+1,082,627	+3.73
Boots and shoes (factory product), . . . . .	26,720,743	27,688,106	+967,363	+3.62
Soles, heels, and cut stock, . . . . .	1,759,580	1,876,739	+117,159	+6.66
Boot and shoe findings, . . . . .	387,362	345,945	-41,417	-10.69
Stitching, heelng, etc., . . . . .	140,533	180,055	+39,522	+28.12
Boxes, barrels, kegs, etc., . . . . .	1,567,757	1,695,564	+127,807	+8.15
Boxes (paper), . . . . .	911,859	895,699	-16,160	-1.77
Bricks, tiles, and sewer pipe, . . . . .	640,658	722,189	+81,531	+12.73
Brooms, brushes, and mops, . . . . .	336,354	402,831	+66,477	+19.76
Building materials, . . . . .	720,016	787,301	+67,285	+9.34
Burial cases, caskets, coffins, etc., . . . . .	116,217	116,997	+780	+0.67
Buttons and dress trimmings, . . . . .	287,963	328,353	+40,390	+14.03
Carpetings, . . . . .	1,803,952	2,238,944	+434,992	+24.11
Carriages and wagons, . . . . .	1,138,183	1,216,600	+78,417	+6.89
Cement, kaolin, lime, and plaster, . . . . .	85,145	93,365	+8,220	+9.65
Chemical preparations (compounded), . . . . .	328,463	340,038	+11,575	+3.52
Clocks and watches, . . . . .	1,621,627	1,793,776	+172,149	+10.62
Clothing, . . . . .	4,092,041	4,370,237	+278,196	+6.80
Cooking, lighting, and heating apparatus, . . . . .	1,162,531	1,281,633	+119,102	+10.25
Cordage and twine, . . . . .	795,096	906,937	+111,841	+14.07
Cotton goods, . . . . .	32,685,625	35,853,378	+3,167,753	+9.69
Cotton goods (woven), . . . . .	28,964,376	31,691,234	+2,726,858	+9.41
Cotton yarn and thread, . . . . .	3,567,100	3,998,704	+431,604	+12.10
Cotton waste, . . . . .	154,149	163,440	+9,291	+6.03
Crayons, pencils, crucibles, etc., . . . . .	42,649	41,487	-1,162	-2.72
Drugs and medicines, . . . . .	366,350	370,622	+4,272	+1.17
Dyestuffs, . . . . .	60,441	61,975	+1,534	+2.54
Earthen, plaster, and stone ware, . . . . .	104,536	114,603	+10,067	+9.63
Electrical apparatus and appliances, . . . . .	2,818,796	3,340,326	+521,530	+18.50
Electroplating, . . . . .	61,240	51,697	-9,543	-15.58
Emery and sand paper and cloth, etc., . . . . .	183,751	209,093	+25,342	+13.79
Fancy articles, etc., . . . . .	224,621	240,569	+15,948	+7.10
Fertilizers, . . . . .	127,092	231,104	+104,012	+81.84
Fine arts and taxidermy, . . . . .	12,299	12,245	-54	-0.44
Fireworks and matches, . . . . .	40,378	33,708	-6,670	-16.52
Flax, hemp, and jute goods, . . . . .	1,006,684	1,093,007	+86,323	+8.57

## WAGES PAID: BY INDUSTRIES — 1901, 1902 — Concluded.

INDUSTRIES.	TOTAL AMOUNT PAID IN WAGES DURING THE YEAR		INCREASE (+) OR DECREASE (—) IN 1902	
	1901	1902	Amounts	Percent- ages
Food preparations, . . . . .	\$4,429,866	\$4,578,491	+\$148,625	+3.36
Furniture, . . . . .	2,963,205	3,317,809	+354,604	+11.97
Glass, . . . . .	156,326	167,727	+11,401	+7.29
Glue, isinglass, and starch, . . . .	114,598	126,595	+11,997	+10.47
Hair work (animal and human), . . .	52,899	48,397	—4,502	—8.51
Hose and belting: rubber, linen, etc., .	44,811	50,826	+6,015	+13.42
Hosiery and knit goods, . . . . .	2,186,042	2,456,158	+270,116	+12.36
Ink, mucilage, and paste, . . . . .	49,308	46,504	—2,804	—5.69
Ivory, bone, shell, and horn goods, etc.,	492,243	596,388	+104,145	+21.16
Jewelry, . . . . .	2,767,685	2,910,444	+142,759	+5.16
Leather, . . . . .	3,141,710	2,987,527	—154,183	—4.91
Leather goods, . . . . .	608,962	654,053	+45,091	+7.40
Liquors (bottled) and carbonated beverages, . . . . .	132,581	125,698	—6,883	—5.19
Liquors (malt), . . . . .	1,289,658	1,210,322	—79,336	—6.15
Liquors (distilled), . . . . .	25,415	25,673	+258	+1.02
Lumber, . . . . .	417,266	443,102	+25,836	+6.19
Machines and machinery, . . . . .	15,063,944	16,452,960	+1,389,016	+9.22
Metals and metallic goods, . . . . .	12,493,553	12,808,669	+315,116	+2.52
Models, lasts, and patterns, . . . . .	464,708	474,608	+9,900	+2.13
Musical instruments and materials, . .	1,940,593	2,217,705	+277,112	+14.28
Oils and illuminating fluids, . . . .	75,007	76,798	+1,791	+2.39
Paints, colors, and crude chemicals, .	176,746	184,768	+8,022	+4.54
Paper, . . . . .	4,202,607	4,775,405	+572,798	+13.63
Paper goods, . . . . .	1,136,157	1,285,341	+149,184	+13.13
Perfumes, toilet articles, etc., . . . .	12,025	12,969	+944	+7.85
Photographs and photographic materials,	117,862	124,403	+6,541	+5.55
Polishes and dressing, . . . . .	149,116	165,824	+16,708	+11.20
Printing, publishing, and bookbinding, .	2,610,915	2,768,477	+157,562	+6.03
Print works, dye works, and bleacheries,	2,885,258	3,399,058	+513,800	+17.81
Railroad construction and equipment, .	1,648,670	1,895,929	+247,259	+15.00
Rubber and elastic goods, . . . . .	4,834,661	5,447,460	+612,799	+12.68
Saddlery and harness, . . . . .	198,225	253,153	+54,928	+27.71
Scientific instruments and appliances, .	792,508	955,678	+163,170	+20.59
Shipbuilding, . . . . .	705,006	625,554	—79,452	—11.27
Silk and silk goods, . . . . .	944,805	1,057,166	+112,361	+11.89
Sporting and athletic goods, . . . . .	205,759	257,430	+51,671	+25.11
Stone, . . . . .	2,436,215	2,572,664	+136,449	+5.60
Quarried, . . . . .	1,073,384	1,171,439	+98,055	+9.14
Cut and monumental, . . . . .	1,362,831	1,401,225	+38,394	+2.82
Straw and palm leaf goods, . . . . .	1,252,680	1,367,463	+114,783	+9.16
Tallow, candles, soap, and grease, . .	416,377	470,885	+54,508	+13.09
Tobacco, snuff, and cigars, . . . . .	1,594,590	1,746,704	+152,114	+9.54
Toys and games (children's), . . . . .	271,303	285,026	+13,723	+5.06
Trunks and valises, . . . . .	35,511	40,507	+4,996	+14.07
Whips, lashes, and stocks, . . . . .	254,039	316,498	+62,459	+24.59
Wooden goods, . . . . .	702,341	743,869	+41,528	+5.91
Woollen goods, . . . . .	8,857,867	10,200,089	+1,342,222	+15.15
Woven goods and yarn, . . . . .	8,512,339	9,804,028	+1,291,689	+15.17
Shoddy, waste, etc., . . . . .	345,528	396,061	+50,533	+14.62
Worsted goods, . . . . .	6,433,538	7,576,602	+1,143,064	+17.77
ALL INDUSTRIES, . . . . .	\$177,734,299	\$193,552,175	+\$15,817,876	+8.90

# AVERAGE YEARLY EARNINGS: BY INDUSTRIES.

## 1901, 1902.

[In this presentation, the figures for average yearly earnings have been obtained by dividing the total amount paid in wages by the number representing the average number of persons employed during the year as derived from the table on pages 71 and 72. It should be borne in mind that these sums were paid to wage earners only, and do not include the amounts paid to officers, clerks, or other salaried persons.]

INDUSTRIES.	AVERAGE YEARLY EARNINGS		INCREASE (+) OR DECREASE (-) IN 1902	
	1901	1902	Amounts	Percentages
Agricultural implements, . . . . .	\$490.13	\$527.05	+\$36.92	+7.53
Arms and ammunition, . . . . .	516.68	561.02	+44.34	+8.58
Artisans' tools, . . . . .	540.65	554.71	+14.06	+2.60
Awnings, sails, tents, etc., . . . . .	554.54	561.15	+6.61	+1.19
Bicycles, tricycles, etc., . . . . .	556.07	556.81	+0.74	+0.13
Boots and shoes, . . . . .	485.23	491.49	+6.26	+1.29
Boots and shoes (factory product), . . . . .	495.94	500.75	+4.81	+0.97
Soles, heels, and cut stock, . . . . .	391.02	411.11	+20.09	+5.14
Boot and shoe findings, . . . . .	384.67	393.12	+8.45	+2.20
Stitching, heeling, etc., . . . . .	354.88	370.48	+15.60	+4.40
Boxes, barrels, kegs, etc., . . . . .	444.25	461.75	+17.50	+3.94
Boxes (paper), . . . . .	360.70	350.70	-10.00	-2.77
Brick, tiles, and sewer pipe, . . . . .	420.10	436.37	+16.27	+3.87
Brooms, brushes, and mops, . . . . .	329.44	327.50	-1.94	-0.59
Building materials, . . . . .	596.53	639.04	+42.51	+7.13
Burial cases, caskets, coffins, etc., . . . . .	584.01	565.20	-18.81	-3.22
Buttons and dress trimmings, . . . . .	383.44	395.61	+12.17	+3.17
Carpetings, . . . . .	394.05	430.07	+36.02	+9.14
Carriages and wagons, . . . . .	605.09	613.21	+8.12	+1.34
Cement, kaolin, lime, and plaster, . . . . .	503.82	469.17	-34.65	-6.88
Chemical preparations (compounded), . . . . .	578.28	567.68	-10.60	-1.83
Clocks and watches, . . . . .	562.09	566.57	+4.48	+0.80
Clothing, . . . . .	372.48	381.15	+8.67	+2.33
Cooking, lighting, and heating apparatus, . . . . .	622.01	644.36	+22.35	+3.59
Cordage and twine, . . . . .	345.99	353.17	+7.18	+2.08
Cotton goods, . . . . .	363.52	382.22	+18.70	+5.14
Cotton goods (woven), . . . . .	368.39	389.37	+20.98	+5.70
Cotton yarn and thread, . . . . .	327.38	333.06	+5.68	+1.73
Cotton waste, . . . . .	392.24	404.55	+12.31	+3.14
Crayons, pencils, crucibles, etc., . . . . .	414.07	402.79	-11.28	-2.72
Drugs and medicines, . . . . .	422.06	447.61	+25.55	+6.05
Dyestuffs, . . . . .	521.04	507.99	-13.05	-2.50
Earthen, plaster, and stone ware, . . . . .	481.73	507.09	+25.36	+5.26
Electrical apparatus and appliances, . . . . .	524.23	525.04	+0.81	+0.15
Electroplating, . . . . .	501.97	538.51	+36.54	+7.28
Emery and sand paper and cloth, etc., . . . . .	583.34	577.60	-5.74	-0.98
Fancy articles, etc., . . . . .	427.85	421.31	-6.54	-1.53
Fertilizers, . . . . .	593.89	645.54	+51.65	+8.70
Fine arts and taxidermy, . . . . .	512.46	556.59	+44.13	+8.61
Fireworks and matches, . . . . .	395.86	411.07	+15.21	+3.84
Flax, hemp, and jute goods, . . . . .	320.60	334.66	+14.06	+4.39

**AVERAGE YEARLY EARNINGS: BY INDUSTRIES—1901, 1902**  
— Concluded.

INDUSTRIES.	AVERAGE YEARLY EARNINGS		INCREASE (+) OR DECREASE (−) IN 1902	
	1901	1902	Amounts	Percentages
Food preparations, . . . . .	\$430.71	\$433.08	+\$2.37	+0.55
Furniture, . . . . .	493.79	496.01	+2.22	+0.45
Glass, . . . . .	550.44	555.39	+4.95	+0.90
Glue, isinglass, and starch, . . . . .	460.23	494.51	+34.28	+7.45
Hair work (animal and human), . . . . .	372.53	384.10	+11.57	+3.11
Hose and belting: rubber, linen, etc., . . . . .	476.71	488.71	+12.00	+2.52
Hosiery and knit goods, . . . . .	327.15	330.44	+3.29	+1.01
Ink, mucilage, and paste, . . . . .	513.63	451.50	−62.13	−12.10
Ivory, bone, shell, and horn goods, etc., . . . . .	414.70	425.69	+10.99	+2.65
Jewelry, . . . . .	494.49	509.17	+14.68	+2.97
Leather, . . . . .	482.08	469.22	−12.86	−2.67
Leather goods, . . . . .	458.56	478.46	+19.90	+4.34
Liquors (bottled) and carbonated beverages, . . . . .	564.17	573.96	+9.79	+1.74
Liquors (malt), . . . . .	816.76	862.05	+45.29	+5.55
Liquors (distilled), . . . . .	726.14	713.14	−13.00	−1.79
Lumber, . . . . .	518.99	525.00	+6.01	+1.16
Machines and machinery, . . . . .	550.10	557.20	+7.10	+1.29
Metals and metallic goods, . . . . .	561.46	555.64	−5.82	−1.04
Models, lasts, and patterns, . . . . .	716.04	740.42	+24.38	+3.40
Musical instruments and materials, . . . . .	589.67	596.64	+6.97	+1.18
Oils and illuminating fluids, . . . . .	547.50	595.33	+47.83	+8.74
Paints, colors, and crude chemicals, . . . . .	547.20	556.53	+9.33	+1.71
Paper, . . . . .	438.18	459.57	+21.39	+4.88
Paper goods, . . . . .	393.68	421.01	+27.33	+6.94
Perfumes, toilet articles, etc., . . . . .	414.66	432.30	+17.64	+4.25
Photographs and photographic materials, . . . . .	566.64	555.37	−11.27	−1.99
Polishes and dressing, . . . . .	417.69	395.76	−21.93	−5.25
Printing, publishing, and bookbinding, . . . . .	539.11	540.40	+1.29	+0.24
Print works, dye works, and bleacheries, . . . . .	424.74	453.81	+29.07	+6.84
Railroad construction and equipment, . . . . .	584.22	575.22	−9.00	−1.54
Rubber and elastic goods, . . . . .	445.47	448.20	+2.73	+0.61
Saddlery and harness, . . . . .	514.87	513.49	−1.38	−0.27
Scientific instruments and appliances, . . . . .	464.81	466.87	+2.06	+0.44
Shipbuilding, . . . . .	660.12	669.04	+8.92	+1.35
Silk and silk goods, . . . . .	375.52	376.89	+1.37	+0.36
Sporting and athletic goods, . . . . .	428.66	435.58	+6.92	+1.61
Stone, . . . . .	536.37	552.19	+15.82	+2.95
Quarried, . . . . .	471.61	499.55	+27.94	+5.92
Cut and monumental, . . . . .	601.43	605.54	+4.11	+0.68
Straw and palm leaf goods, . . . . .	446.75	474.15	+27.40	+6.13
Tallow, candles, soap, and grease, . . . . .	506.54	532.68	+26.14	+5.16
Tobacco, snuff, and cigars, . . . . .	638.35	669.24	+30.89	+4.84
Toys and games (children's), . . . . .	437.59	407.76	−29.83	−6.82
Trunks and valises, . . . . .	455.27	465.60	+10.33	+2.27
Whips, lashes, and stocks, . . . . .	421.29	448.93	+27.64	+6.56
Wooden goods, . . . . .	463.90	481.47	+17.57	+3.79
Woollen goods, . . . . .	403.62	416.01	+12.39	+3.07
Woven goods and yarn, . . . . .	401.70	414.06	+12.36	+3.08
Shoddy, waste, etc., . . . . .	457.65	470.94	+13.29	+2.90
Worsted goods, . . . . .	389.86	397.76	+7.90	+2.03
ALL INDUSTRIES, . . . . .	\$449.69	\$459.98	+\$10.29	+2.29

# CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES.

1901, 1902.

[In this presentation is shown for the nine leading industries and for All Industries for 1901 and 1902, a classification by sex of the weekly wages, ranging from under \$5 per week to \$20 and over. The returns were made by manufacturers to cover the week during which the largest number of persons was employed. It should be borne in mind that these figures represent wage earners only; officers, clerks, or other salaried persons are not included. Considerations of space have led to the curtailment of this presentation to the nine leading industries, but the figures in detail for 1901 and 1902 for any industry desired may be obtained upon application to this Department.]

INDUSTRIES AND CLASSIFICATION OF WEEKLY WAGES.	1901				1902			
	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
<i>Boots and Shoes.</i>	43,253	19,263	7,071	69,587	44,646	19,697	6,996	71,339
Under \$5, . . . . .	1,428	2,582	3,009	7,019	1,455	2,462	2,951	6,868
\$5 but under \$6, . . . .	1,361	1,879	1,436	4,676	1,186	1,770	1,522	4,478
\$6 but under \$7, . . . .	2,017	2,443	1,146	5,606	2,023	2,456	1,182	5,661
\$7 but under \$8, . . . .	2,607	2,360	666	5,633	2,556	2,444	630	5,630
\$8 but under \$9, . . . .	2,911	2,318	358	5,587	2,973	2,297	274	5,544
\$9 but under \$10, . . . .	4,752	2,514	266	7,532	4,650	2,585	245	7,480
\$10 but under \$12, . . . .	7,093	2,525	134	9,752	7,400	2,841	119	10,360
\$12 but under \$15, . . . .	9,689	1,958	47	11,694	10,235	2,112	65	12,412
\$15 but under \$20, . . . .	8,307	644	7	8,958	8,843	662	8	9,513
\$20 and over, . . . . .	3,088	40	2	3,130	3,325	68	-	3,393
<i>Carpetings.</i>	2,000	1,986	866	4,852	2,247	2,169	964	5,380
Under \$5, . . . . .	82	262	426	770	90	246	430	766
\$5 but under \$6, . . . .	47	337	216	600	73	280	244	597
\$6 but under \$7, . . . .	225	294	87	606	168	286	106	560
\$7 but under \$8, . . . .	204	235	62	501	293	292	64	649
\$8 but under \$9, . . . .	318	310	46	674	288	386	76	750
\$9 but under \$10, . . . .	253	232	19	504	302	319	37	658
\$10 but under \$12, . . . .	299	276	7	582	299	315	3	617
\$12 but under \$15, . . . .	303	40	3	346	373	45	4	422
\$15 but under \$20, . . . .	221	-	-	221	287	-	-	287
\$20 and over, . . . . .	48	-	-	48	74	-	-	74
<i>Cotton Goods.</i>	41,242	34,719	18,866	94,827	41,853	34,757	19,876	96,486
Under \$5, . . . . .	2,695	4,933	9,117	16,745	2,410	4,148	8,529	15,087
\$5 but under \$6, . . . .	3,242	5,190	4,899	13,331	2,818	4,456	5,009	12,283
\$6 but under \$7, . . . .	6,401	7,904	2,887	17,192	5,647	7,087	3,480	16,214
\$7 but under \$8, . . . .	6,343	6,467	1,133	13,943	6,317	6,307	1,630	14,254
\$8 but under \$9, . . . .	5,133	5,294	459	10,886	5,048	5,215	591	10,554
\$9 but under \$10, . . . .	5,512	3,335	308	9,155	5,179	3,902	365	9,446
\$10 but under \$12, . . . .	5,467	1,431	51	6,949	6,994	3,299	215	10,508
\$12 but under \$15, . . . .	4,140	162	5	4,307	4,714	331	27	5,072
\$15 but under \$20, . . . .	1,529	3	6	1,538	1,959	11	30	2,000
\$20 and over, . . . . .	780	-	1	781	767	1	-	768

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES  
— 1901, 1902 — Continued.

INDUSTRIES AND CLASSIFICATION OF WEEKLY WAGES.	1901				1902			
	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
<i>Leather.</i>	6,966	80	330	7,376	7,133	87	272	7,492
Under \$5, . . . . .	108	5	67	180	159	23	56	238
\$5 but under \$6, . . . .	113	15	55	183	171	16	71	258
\$6 but under \$7, . . . .	288	49	120	457	343	42	98	483
\$7 but under \$8, . . . .	720	2	46	768	668	3	32	703
\$8 but under \$9, . . . .	899	2	28	929	929	1	10	940
\$9 but under \$10, . . . .	1,655	3	12	1,670	1,558	1	3	1,562
\$10 but under \$12, . . . .	1,659	2	1	1,662	1,651	-	2	1,653
\$12 but under \$15, . . . .	956	2	-	958	997	1	-	998
\$15 but under \$20, . . . .	466	-	1	467	538	-	-	538
\$20 and over, . . . . .	102	-	-	102	119	-	-	119
<i>Machines and Machinery.</i>	29,733	336	1,608	31,677	31,141	368	2,152	33,661
Under \$5, . . . . .	920	35	567	1,522	957	20	730	1,707
\$5 but under \$6, . . . .	853	68	309	1,230	768	56	438	1,262
\$6 but under \$7, . . . .	1,410	97	322	1,829	1,226	103	371	1,700
\$7 but under \$8, . . . .	2,272	76	204	2,552	2,198	98	252	2,548
\$8 but under \$9, . . . .	2,966	31	81	3,078	2,793	40	117	2,950
\$9 but under \$10, . . . .	4,259	12	68	4,319	4,363	31	84	4,478
\$10 but under \$12, . . . .	4,834	10	23	4,867	5,139	16	33	5,188
\$12 but under \$15, . . . .	6,046	6	26	6,078	6,903	2	125	7,030
\$15 but under \$20, . . . .	5,031	1	8	5,040	5,544	2	2	5,548
\$20 and over, . . . . .	1,162	-	-	1,162	1,250	-	-	1,250
<i>Metals and Metallic Goods.</i>	21,395	1,418	2,065	24,878	22,222	1,508	2,214	25,944
Under \$5, . . . . .	489	300	949	1,738	620	310	932	1,862
\$5 but under \$6, . . . .	397	309	386	1,092	409	297	454	1,160
\$6 but under \$7, . . . .	819	390	398	1,607	798	445	438	1,681
\$7 but under \$8, . . . .	1,344	172	179	1,695	1,369	169	224	1,762
\$8 but under \$9, . . . .	1,487	80	65	1,632	1,796	108	83	1,987
\$9 but under \$10, . . . .	3,509	77	60	3,646	3,195	74	51	3,320
\$10 but under \$12, . . . .	3,897	59	25	3,981	4,068	74	24	4,166
\$12 but under \$15, . . . .	4,010	23	2	4,035	4,062	27	8	4,097
\$15 but under \$20, . . . .	4,245	8	1	4,254	4,576	4	-	4,580
\$20 and over, . . . . .	1,198	-	-	1,198	1,329	-	-	1,329
<i>Paper.</i>	6,105	3,447	835	10,387	6,540	3,683	980	11,203
Under \$5, . . . . .	66	654	263	983	54	697	269	1,020
\$5 but under \$6, . . . .	62	810	173	1,045	46	865	185	1,096
\$6 but under \$7, . . . .	156	1,165	229	1,550	139	1,215	288	1,642
\$7 but under \$8, . . . .	579	490	77	1,146	634	483	127	1,244
\$8 but under \$9, . . . .	532	196	38	766	488	232	37	757
\$9 but under \$10, . . . .	1,833	63	45	1,941	2,015	97	56	2,168
\$10 but under \$12, . . . .	935	32	8	975	1,093	52	17	1,162
\$12 but under \$15, . . . .	996	29	2	1,027	1,039	34	1	1,074
\$15 but under \$20, . . . .	726	8	-	734	824	8	-	832
\$20 and over, . . . . .	220	-	-	220	208	-	-	208
<i>Woollen Goods.</i>	14,229	6,921	3,266	24,416	15,587	7,663	3,477	26,727
Under \$5, . . . . .	490	974	1,415	2,879	458	987	1,266	2,711
\$5 but under \$6, . . . .	526	798	998	2,322	523	849	1,145	2,517
\$6 but under \$7, . . . .	1,584	1,420	453	3,457	1,533	1,483	627	3,643
\$7 but under \$8, . . . .	2,939	1,270	261	4,470	3,051	1,383	285	4,719
\$8 but under \$9, . . . .	1,849	1,033	94	2,976	1,922	1,145	96	3,163
\$9 but under \$10, . . . .	2,156	591	29	2,776	2,458	772	35	3,265
\$10 but under \$12, . . . .	2,020	642	9	2,671	2,468	735	23	3,226
\$12 but under \$15, . . . .	1,755	183	7	1,945	2,129	281	-	2,410
\$15 but under \$20, . . . .	615	10	-	625	687	28	-	715
\$20 and over, . . . . .	295	-	-	295	358	-	-	358

CLASSIFIED WEEKLY WAGES: BY SELECTED INDUSTRIES  
— 1901, 1902 — Concluded.

INDUSTRIES AND CLASSIFICATION OF WEEKLY WAGES.	1901				1902			
	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes	ADULTS (21 YEARS OF AGE AND OVER)		Young Persons (under 21 Years of Age)	Both Sexes
	Males	Females			Males	Females		
<i>Worsted Goods.</i>	8,642	5,702	4,427	18,771	9,329	6,021	5,334	20,684
Under \$5. . . . .	277	452	1,519	2,248	203	428	1,736	2,367
\$5 but under \$6. . . . .	743	1,030	1,464	3,237	830	1,275	1,674	3,779
\$6 but under \$7. . . . .	811	1,583	1,043	3,437	900	1,703	1,289	3,892
\$7 but under \$8. . . . .	1,121	994	220	2,335	1,157	791	314	2,262
\$8 but under \$9. . . . .	1,286	599	127	2,012	1,589	618	200	2,407
\$9 but under \$10. . . . .	838	453	38	1,329	835	488	55	1,378
\$10 but under \$12. . . . .	1,294	407	13	1,714	1,280	463	47	1,790
\$12 but under \$15. . . . .	1,652	145	2	1,799	1,817	220	15	2,052
\$15 but under \$20. . . . .	449	36	1	486	556	35	4	595
\$20 and over. . . . .	171	3	-	174	162	-	-	162
<b>ALL INDUSTRIES.</b>	<b>274,115</b>	<b>114,135</b>	<b>59,535</b>	<b>447,785</b>	<b>286,366</b>	<b>118,517</b>	<b>64,425</b>	<b>469,308</b>
Under \$5. . . . .	8,931	17,371	28,178	54,480	8,743	16,668	27,703	53,114
\$5 but under \$6. . . . .	9,693	17,369	14,033	41,095	9,180	16,595	15,185	40,960
\$6 but under \$7. . . . .	18,250	22,971	9,349	50,570	17,315	22,843	11,105	51,263
\$7 but under \$8. . . . .	26,039	18,159	4,168	48,366	25,927	18,739	5,300	49,966
\$8 but under \$9. . . . .	25,970	14,359	1,898	42,227	26,557	15,198	2,349	44,104
\$9 but under \$10. . . . .	29,467	10,910	1,200	51,577	40,638	12,364	1,549	54,551
\$10 but under \$12. . . . .	43,936	7,940	466	52,342	47,826	10,502	777	59,105
\$12 but under \$15. . . . .	50,524	3,777	190	54,491	53,944	4,291	372	58,607
\$15 but under \$20. . . . .	38,720	1,129	46	39,895	42,408	1,153	83	43,644
\$20 and over. . . . .	12,585	150	7	12,742	13,828	164	2	13,994

*Analysis.*

The first table of the series, pages 69 and 70, shows the number of males and females in each of the 80 classified industries. An examination of the figures shows that the entire number of males employed in the 4,658 establishments for 1901 was 266,553, as against 283,525 in 1902, the percentage of gain being 6.37. The females rose from 128,681 to 137,256, showing a slightly larger percental gain than the males, namely, 6.66.

From the table showing average number of persons employed, both sexes, pages 71 and 72, we find that the largest numerical gains appear in the textile group of industries, Cotton Goods showing an increase of 3,888 persons employed in 1902 over the number in 1901; Woollen Goods, a gain of 2,573, and Worsted Goods, a gain of 2,546. The largest percentage of gain, 67.29, appears in Fertilizers.

Of the nine leading industries, all, with the exception of Leather, show increases in average number of persons employed, the percentages of gain being as follows: Boots and



Shoes, 2.41; Carpetings, 13.72; Cotton Goods, 4.32; Machines and Machinery, 7.83; Metals and Metallic Goods, 3.60; Paper, 8.34; Woollen Goods, 11.72; and Worsted Goods, 15.43. As in some of the points already analyzed, viz: cost of stock and materials used and value of goods produced, the leather industry shows a decrease also in persons employed, the number declining from 6,517 in 1901 to 6,367 in 1902, or 2.30 per cent.

For All Industries, the aggregate average number of persons employed in the 4,658 establishments was 395,234 in 1901 as against 420,781 in 1902, a gain of 25,547, or 6.46 per cent.

On pages 73 and 74, in connection with the average, we present the smallest and greatest number of persons employed. It should be noted that these smallest and greatest numbers represent, respectively, the minimum and maximum number of persons reported by each of the 4,658 establishments, the aggregate for All Industries for the smallest number being 335,661 in 1901 as against 365,312 in 1902, a gain in the later year of 29,651 persons, or 8.83 per cent. The aggregate greatest number in 1901 was 448,986 as against 471,289 in 1902, the increase being not so great as the gain in the smallest number, namely, 22,303 persons, or 4.97 per cent.

As bringing out more clearly the significance of this "smallest and greatest number," the table on pages 75 and 76 is presented showing the excess of greatest over smallest number of persons employed, by industries, from which the following figures are reproduced:

INDUSTRIES.	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (-) IN 1902	
	1901	1902	Number	Percentages
Boots and shoes (aggregate), . . .	21,182	21,587	+405	+1.91
Factory product, . . . . .	19,102	19,458	+356	+1.86
Soles, heels, and cut stock, . . .	1,567	1,595	+28	+1.79
Findings, . . . . .	345	338	-7	-2.03
Stitching, heeling, etc., . . . .	168	196	+28	+16.67
Carpetings, . . . . .	532	469	-63	-11.84
Cotton goods (aggregate), . . . .	15,214	8,241	-6,973	-45.83
Woven, . . . . .	12,325	5,540	-6,785	-55.05
Yarn and thread, . . . . .	2,358	2,651	+297	+12.59
Waste, . . . . .	31	50	+19	+61.29

INDUSTRIES.	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (-) IN 1902	
	1901	1902	Number	Percentages
Leather, . . . . .	1,886	2,221	+335	+17.76
Machines and machinery, . . . . .	8,398	8,653	+255	+3.04
Metals and metallic goods, . . . . .	5,826	5,548	-278	-4.77
Paper, . . . . .	2,207	1,638	-569	-25.78
Woollen goods (aggregate), . . . . .	5,958	4,735	-1,223	-20.53
Woven goods and yarn, . . . . .	5,564	4,346	-1,218	-21.89
Shoddy, waste, etc., . . . . .	394	389	-5	-1.27
Worsted goods, . . . . .	5,002	4,411	-591	-11.82
Nine industries, . . . . .	66,205	57,503	-8,702	-13.14
Other industries, . . . . .	47,120	48,474	+1,354	+2.87
All industries, . . . . .	113,325	105,977	-7,348	-6.48

It will be understood that the narrower the range in any year, the greater the uniformity of employment, and that, therefore, minus signs in the table, in 1902 as compared with 1901, indicate a better condition of employment in the later year.

An examination of the figures shows that in six of the nine leading industries employment was more continuous in 1902 than in 1901, since the range between the smallest and greatest number in those industries is narrower in the later year. These industries are Carpetings, which shows that 63 more persons were continuously employed in 1902 than in 1901; Cotton Goods, which shows that, at some time during 1902, 6,973 more persons were employed than at corresponding periods in 1901; Metals and Metallic Goods shows longer employment for 278 persons; the range for Paper was 569 persons; for Woollen Goods, 1,223 persons; for Worsted Goods, 591 persons; while the aggregate for All Industries shows employment for 7,348 more persons than in the preceding year for a period, of course, indeterminable.

This range of unemployment on the basis of establishments is shown by percentages in the following table, the comparisons in the different groups being taken from the Reports on Annual Statistics of Manufactures subsequent to 1895:

COMPARATIVE YEARS.	Number of Establishments Considered	PERCENTAGES		
		Persons Employed at Periods of Employment of Smallest Number of Persons Employed at Periods of Employment of Greatest Number	Range (Unemployed at some time During the Year)	Persons Employed at Periods of Employment of Greatest Number
1895, . . . . .	4,609	73.52	26.47	100.00
1896, . . . . .	4,609	66.52	33.48	100.00
1896, . . . . .	4,695	67.32	32.68	100.00
1897, . . . . .	4,695	71.74	28.26	100.00
1897, . . . . .	4,701	72.18	27.87	100.00
1898, . . . . .	4,701	70.36	29.64	100.00
1898, . . . . .	4,740	70.21	29.79	100.00
1899, . . . . .	4,740	74.19	25.81	100.00
1899, . . . . .	4,645	74.17	25.83	100.00
1900, . . . . .	4,645	73.08	26.92	100.00
1900, . . . . .	4,696	73.17	26.83	100.00
1901, . . . . .	4,696	74.41	25.59	100.00
1901, . . . . .	4,658	74.76	25.24	100.00
1902, . . . . .	4,658	77.51	22.49	100.00

In this table the number of persons employed at periods of employment of greatest number has been considered as 100 per cent. Using this for a base, the percentage of unemployment for any given year would be the variation between the percentage employed at the periods of employment of the smallest number and 100. In no year since 1895 has employment reached the level of 1902, the percentage of unemployment for that year being only 22.49. That is to say, in 1902, 22 out of every 100 persons were temporarily unemployed, while for the other years considered in the table the proportion in every 100 never fell below 25, and in some instances was considerably in excess of that, notably the group 1895, 1896, where 33 in every 100 (33.48) were temporarily unemployed and in the group 1898, 1899 showing 30 in every 100 (29.79). It should not be assumed, however, that these persons were actually out of employment, since persons temporarily unemployed in one establishment might find employment in some other establishment in the same or in a different industry, and in order to show employment and unemployment, by industries, we bring forward from the presentation on pages 77 to 79,

which shows employment and unemployment month by month for the years 1901 and 1902, the following data for All Industries :

MONTHS.	NUMBER OF PERSONS EMPLOYED		PERCENTAGES OF EMPLOYMENT		PERCENTAGES OF UNEMPLOYMENT	
	1901	1902	1901	1902	1901	1902
January, . . . . .	386,981	421,162	94.00	95.74	6.00	4.26
February, . . . . .	388,922	422,843	94.47	96.01	5.53	3.99
March, . . . . .	393,847	426,403	95.67	96.93	4.33	3.07
April, . . . . .	385,400	422,002	93.62	95.93	6.38	4.07
May, . . . . .	390,794	423,314	94.93	96.23	5.07	3.77
June, . . . . .	387,508	420,190	94.13	95.52	5.87	4.48
July, . . . . .	386,195	419,795	93.81	95.43	6.19	4.57
August, . . . . .	391,677	421,556	95.14	95.83	4.86	4.17
September, . . . . .	399,810	430,464	97.12	97.85	2.88	2.15
October, . . . . .	407,041	437,666	98.87	99.49	1.13	0.51
November, . . . . .	411,676	439,908	100.00	100.00	-	-
December, . . . . .	409,293	437,203	99.42	99.39	0.58	0.61

An examination of the figures brings out the fact that November was the month of greatest employment in both years. The number of persons for that month, therefore, has been considered as representing 100 per cent. The percentages of unemployment during the other months are obtained by finding the difference between the percentages of employment appearing each month and 100 per cent. In 1901, the greatest variation from this highest number appears in the month of April, when the number of persons employed is represented by 93.62 per cent. Unemployment for that month would, therefore, appear as 6.38 per cent. In 1902, the greatest variation occurs in the month of July, the percentage of employment being 95.43, the difference between this percentage and 100, namely, 4.57, representing the percentage of unemployment. It will be readily seen from the table that unemployment does not reach 5 per cent in any month in 1902 and that, therefore, the percentage of employment, which is its complement, holds the uniformly high level of 95 per cent for the entire year for the industries considered as a whole.

On pages 80 and 81 will be found the presentation relating to total amount paid in wages for 1901 and 1902. We bring forward for analysis the figures for the nine leading industries, for other industries, and for All Industries :

INDUSTRIES.	TOTAL AMOUNT PAID IN WAGES DURING THE YEAR		INCREASE (+) OR DECREASE (-) IN 1902	
	1901	1902	Amounts	Percentages
Boots and shoes, . . . . .	\$29,008,218	\$30,090,845	+\$1,082,627	+3.73
Carpetings, . . . . .	1,803,952	2,238,944	+434,992	+24.11
Cotton goods, . . . . .	32,685,625	35,853,378	+3,167,753	+9.69
Leather, . . . . .	3,141,710	2,987,527	-154,183	-4.91
Machines and machinery, . . . . .	15,063,944	16,452,960	+1,389,016	+9.22
Metals and metallic goods, . . . . .	12,493,553	12,808,669	+315,116	+2.52
Paper, . . . . .	4,202,607	4,775,405	+572,798	+13.63
Woollen goods, . . . . .	8,857,867	10,200,089	+1,342,222	+15.15
Worsted goods, . . . . .	6,433,538	7,576,602	+1,143,064	+17.77
Nine industries, . . . . .	113,691,014	122,984,419	+9,293,405	+8.17
Other industries, . . . . .	64,043,285	70,567,756	+6,524,471	+10.19
All industries, . . . . .	177,734,299	193,552,175	+15,817,876	+8.90

For All Industries, the total amount paid in wages for 1901 was \$177,734,299, and for 1902, \$193,552,175, an increase of \$15,817,876, or 8.90 per cent. Of the nine leading industries, the largest percentage of increase is found in Carpetings, namely, 24.11, the others appearing in order named with percentages of increase as follows: Worsted Goods, 17.77; Woollen Goods, 15.15; Paper, 13.63; Cotton Goods, 9.69; Machines and Machinery, 9.22; Boots and Shoes, 3.73; and Metals and Metallic Goods, 2.52. The only industry showing a decrease in total amount paid in wages is Leather, the percentage of decrease being 4.91.

In the aggregate, the nine leading industries show \$9,293,405 more to have been disbursed in wages in 1902 than in 1901, a gain of 8.17 per cent. For the industries other than the nine, the increase in amount paid in wages in 1902 as compared with 1901 was \$6,524,471, or 10.19 per cent.

The presentation on pages 82 and 83 exhibits the average yearly earnings for the years 1901 and 1902. We bring forward the data for the nine principal industries, for other industries, and for All Industries:

INDUSTRIES.	AVERAGE YEARLY EARNINGS		INCREASE (+) OR DECREASE (-) IN 1902	
	1901	1902	Amounts	Percentages
Boots and shoes (aggregate), . . . .	\$485.23	\$491.49	+\$6.26	+1.29
Factory product, . . . . .	495.94	500.75	+4.81	+0.97
Soles, heels, and cut stock, . . . .	391.02	411.11	+20.09	+5.14
Findings, . . . . .	384.67	393.12	+8.45	+2.20
Stitching, heeling, etc., . . . . .	354.88	370.48	+15.60	+4.40
Carpetings, . . . . .	394.05	430.07	+36.02	+9.14
Cotton goods (aggregate), . . . . .	363.52	382.22	+18.70	+5.14
Woven, . . . . .	368.39	389.37	+20.98	+5.70
Yarn and thread, . . . . .	327.38	333.06	+5.68	+1.73
Waste, . . . . .	392.24	404.55	+12.31	+3.14
Leather, . . . . .	482.08	469.22	-12.86	-2.67
Machines and machinery, . . . . .	550.10	557.20	+7.10	+1.29
Metals and metallic goods, . . . . .	561.46	555.64	-5.82	-1.04
Paper, . . . . .	438.18	459.57	+21.39	+4.88
Woollen goods (aggregate), . . . . .	403.62	416.01	+12.39	+3.07
Woven goods and yarn, . . . . .	401.70	414.06	+12.36	+3.08
Shoddy, waste, etc., . . . . .	457.65	470.94	+13.29	+2.90
Worsted goods, . . . . .	389.86	397.76	+7.90	+2.03
Nine industries, . . . . .	439.87	450.27	+10.40	+2.36
Other industries, . . . . .	468.26	477.96	+9.70	+2.07
All industries, . . . . .	449.69	459.98	+10.29	+2.29

The average yearly earnings for All Industries for 1901 for all persons without discrimination as to sex, age, or skill, was \$449.69, and in 1902, \$459.98, an increase of \$10.29, or 2.29 per cent. Seven of the nine leading industries show percentages of gain as follows: Boots and Shoes, in the aggregate, 1.29 per cent, and it will be noted that all the subdivisions of this industry show percentages of gain; Carpetings, 9.14 per cent; Cotton Goods, in the aggregate, 5.14 per cent, the subdivisions of this industry, namely, Woven Goods, Cotton Yarn and Thread, and Cotton Waste, all showing percentages of gain; Machines and Machinery, an increase of 1.29 per cent; Paper, 4.88 per cent; Woollen Goods, 3.07 per cent; and Worsted Goods, 2.03 per cent. The two industries showing decreases are Leather, 2.67 per cent, and Metals and Metallic Goods, 1.04 per cent.

The presentation of classified weekly wages, pages 84 to 86, shows actual wage conditions more effectively. Here the number of males, females, and young persons receiving certain

specified sums per week, ranging from under \$5 to \$20 and over, are brought together, and it should be remembered that wage earners only are included; clerks, officers, and other salaried persons being omitted from the table.

The data for All Industries, reduced to percentages, appear in the following table :

CLASSIFICATION OF WEEKLY WAGES.	PERCENTAGES					
	1901			1902		
	Males	Females	Young Persons	Males	Females	Young Persons
Under \$5, . . . . .	16.39	31.89	51.72	16.46	31.38	52.16
\$5 but under \$6, . . . .	23.59	42.26	34.15	22.41	40.52	37.07
\$6 but under \$7, . . . .	36.09	45.42	18.49	33.78	44.56	21.66
\$7 but under \$8, . . . .	53.84	37.54	8.62	51.89	37.50	10.61
\$8 but under \$9, . . . .	61.50	34.00	4.50	60.21	34.46	5.33
\$9 but under \$10, . . . .	76.52	21.15	2.33	74.50	22.66	2.84
\$10 but under \$12, . . . .	83.94	15.17	0.89	80.92	17.77	1.31
\$12 but under \$15, . . . .	92.72	6.93	0.35	92.04	7.32	0.64
\$15 but under \$20, . . . .	97.05	2.83	0.12	97.17	2.64	0.19
\$20 and over, . . . . .	98.77	1.18	0.05	98.81	1.17	0.02
TOTALS, . . . . .	61.22	25.49	13.29	61.02	25.25	13.73

It will be noted that the low wage classes show small percentages of males and consequently high percentages of females and young persons. For example, in 1902, the class receiving under \$5 shows that out of every 100 persons, 52 (52.16 per cent) were under 21 years of age, and 32 (31.38 per cent) were females, while the males in this class number but 16 (16.46 per cent). On the other hand, in the class receiving \$10 but under \$12, 81 out of every 100 were males, 18 were females, and one under 21 years of age. Females and young persons, it will be noted, are represented in every class, although as the rate per week increases the proportion of females and young persons perceptibly diminishes.

The fluctuation in wage classes is shown in the following table :

CLASSIFICATION OF WEEKLY WAGES.	PERCENTAGES							
	1901				1902			
	Males	Females	Young Persons	Totals	Males	Females	Young Persons	Totals
Under \$5, . . . .	3.26	15.22	47.33	12.17	3.05	14.07	43.00	11.32
\$5 but under \$6, . .	3.54	15.22	23.57	9.18	3.21	14.00	23.57	8.73
\$6 but under \$7, . .	6.66	20.12	15.70	11.29	6.05	19.28	17.24	10.92
\$7 but under \$8, . .	9.50	15.91	7.00	10.80	9.05	15.81	8.23	10.65
\$8 but under \$9, . .	9.47	12.58	3.19	9.43	9.27	12.82	3.64	9.40
\$9 but under \$10, . .	14.40	9.56	2.02	11.52	14.19	10.43	2.40	11.62
\$10 but under \$12, . .	16.03	6.96	0.78	11.69	16.70	8.86	1.20	12.59
\$12 but under \$15, . .	18.43	3.31	0.32	12.17	18.84	3.62	0.58	12.49
\$15 but under \$20, . .	14.12	0.99	0.08	8.91	14.81	0.97	0.13	9.30
\$20 and over, . . . .	4.59	0.13	0.01	2.84	4.83	0.14	0.01	2.98
TOTALS, . . . .	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

In this table, the percentages in the different wage classes for males, females, and young persons totalize to 100, and an examination of the figures shows that in the classes from \$9 but under \$10 to \$20 and over are included 67.57 per cent of the males in 1901, 20.95 per cent of the females, and 3.21 per cent of the young persons. The conditions for 1902 show that 69.37 per cent of the males, 24.02 per cent of the females, and 4.32 per cent of the young persons are found in these classes.

Applying the percentages found in the preceding analysis tables to the average number of persons employed in 1902, so as to distribute the same by males, females, and young persons into the various classes, we secure the following figures:

CLASSIFICATION OF WEEKLY WAGES.	NUMBER OF—			ESTIMATED WEEKLY WAGES OF—		
	Males	Females	Young Persons	Males	Females	Young Persons
Under \$5, . . . .	7,840	14,947	24,845	\$23,520	\$44,841	\$74,535
\$5 but under \$6, . .	8,232	14,885	13,617	45,276	81,868	74,894
\$6 but under \$7, . .	15,522	20,475	9,952	100,893	133,088	64,688
\$7 but under \$8, . .	23,253	16,805	4,755	174,398	126,038	35,663
\$8 but under \$9, . .	23,816	13,630	2,108	202,436	115,855	17,918
\$9 but under \$10, . .	36,427	11,079	1,389	346,057	105,251	13,196
\$10 but under \$12, . .	42,868	9,414	694	471,548	103,554	7,634
\$12 but under \$15, . .	48,373	3,847	336	653,036	51,935	4,536
\$15 but under \$20, . .	38,026	1,033	74	665,455	18,078	1,295
\$20 and over, . . . .	12,390	147	2	278,775	3,308	45
TOTALS, . . . .	256,747	106,262	57,772	\$2,961,394	\$783,816	\$294,404



The figures in the preceding table are estimates based upon actual percentages, the last three columns showing the estimated amount paid to males, females, and young persons for one week of the year 1902. Of the aggregate amount paid for this week, \$4,039,614, 73.31 per cent was paid to males, 19.40 per cent to females, and 7.29 per cent to young persons of both sexes under 21 years of age. These percentages substantiate the returns made in the reports on the Statistics of Manufactures for we find from the United States Census of 1900 that of the total amount paid in wages in Massachusetts, 78.93 per cent was paid to men, and 19.99 per cent to women 16 years of age or over. The fact that the age separation is at 21 instead of 16 years would be sufficient to explain the slight variation in the above percentages.

Distributing the total amount paid in wages in each of the nine leading industries for 1902 in the proper proportions on the basis indicated above, and dividing by the number of males, females, and young persons, respectively, we produce the following table:

*Estimated Average Yearly Earnings.*

INDUSTRIES.	Males	Females	Young Persons
Boots and shoes (factory product), . . . . .	\$582.15	\$399.91	\$239.53
Carpetings, . . . . .	545.11	388.48	255.57
Cotton goods (woven), . . . . .	466.72	368.09	251.77
Cotton yarn and thread, . . . . .	442.57	312.88	226.86
Leather, . . . . .	479.67	258.92	262.38
Machines and machinery, . . . . .	578.30	346.38	287.73
Metals and metallic goods, . . . . .	603.52	297.79	250.83
Paper, . . . . .	571.44	305.54	291.57
Woollen goods (woven goods and yarn), . . . . .	469.75	377.67	257.69
Woollen goods (shoddy, waste, etc.), . . . . .	494.04	295.37	226.82
Worsted goods, . . . . .	497.26	362.84	263.14
ALL INDUSTRIES, . . . . .	\$552.66	\$353.36	\$244.24

It is interesting to compare the average yearly earnings so obtained with the amounts shown on pages 82 and 83, bearing in mind that the latter presentation shows average yearly earnings for all persons without discrimination as to sex or age. The figure for Boots and Shoes (Factory Product) for 1902 appears as \$500.75. By the method outlined above we find that

of the total amount paid in wages in this industry for one week, 73.55 per cent was paid to males, 22.14 per cent to females, and 4.31 per cent to young persons. Distributing the total amount paid in wages among these three classes pro rata, we find the average yearly earnings to be \$582.15 for males, \$399.91 for females, and \$239.53 for young persons. Similarly for Cotton Goods (Woven), we find the average yearly earnings to be \$466.72 for males, \$368.09 for females, and \$251.77 for young persons. Machines and Machinery exhibits average yearly earnings of \$578.30 for males, \$346.38 for females, and \$287.73 for young persons. The results for All Industries for 1902 show average yearly earnings for males to be \$552.66; for females, \$353.36, and for young persons, \$244.24.

For the purpose of comparison, we bring forward from preceding volumes the average yearly earnings prepared on this basis for All Industries since 1899 :

	1899.	1900.	1901.	1902.
Males, . . .	\$523.34	\$530.82	\$542.23	\$552.66
Females, . . .	324.72	334.70	342.68	353.36
Young persons, . .	219.34	228.33	231.85	244.24

The steady progression since 1899 will be readily noted and the figures, though estimates, are a fair indication of the increase in wages for males, females, and young persons, respectively.

### Working Time and Proportion of Business Done.

Under this head are shown the average number of days in operation and the average proportion of business done.

The average number of days in operation is based upon the average number of persons employed, the number of days reported by each establishment being multiplied by the figures representing the average number of persons employed therein, and the sum of these multiplications for all the establishments divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained. The actual number of working days, exclusive of Sundays and holidays, was 306 in both 1901 and 1902.

The proportion of business done is based upon the greatest amount of goods which can be turned out in any establishment, presupposing a sufficient demand for goods, without increasing existing facilities. This greatest amount is considered as 100 per cent. If an establishment produced goods equivalent to three-fourths of its greatest capacity, the proportion of business done would be 75 per cent, while if only one-half of a possible output were reached it would be considered as 50 per cent. For example, in All Industries the average proportion of business done for the year 1902 is represented by 70.20 per cent, or nearly three-fourths of the possible 100 per cent which might have been done, had business conditions warranted, without enlarging the capacity of the manufacturing plants.

The several proportions returned by the establishments in each industry have been aggregated and the sum divided by the full number of establishments to obtain the average for each industry and for All Industries.

## DAYS IN OPERATION AND PROPORTION OF BUSINESS DONE: BY INDUSTRIES.

1901, 1902.

[The figures given in the first two columns of this presentation represent the Average Number of Days in Operation, while in the last two columns the Average Proportion of Business Done is shown. The average number of days in operation is based upon the average number of persons employed, the number of days per establishment being multiplied by the figures representing the average number of persons, and the sum divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained. As regards Average Proportion of Business Done, greatest capacity, or maximum production, has been considered as 100 per cent, and the percentages given indicate the average proportion of business done during each year on the basis stated.]

INDUSTRIES.	AVERAGE NUMBER OF DAYS IN OPERATION		AVERAGE PROPOR- TION OF BUSINESS DONE	
	1901	1902	1901	1902
Agricultural implements, . . . . .	292.94	294.09	61.63	66.50
Arms and ammunition, . . . . .	289.10	295.87	78.73	82.27
Artisans' tools, . . . . .	295.83	296.65	68.45	69.86
Awnings, sails, tents, etc., . . . . .	286.92	288.33	52.74	52.74
Bicycles, tricycles, etc., . . . . .	301.36	302.39	62.00	51.40
Boots and shoes, . . . . .	292.39	291.70	66.49	67.06
Boots and shoes (factory product), . . . . .	292.18	291.52	67.60	66.99
Soles, heels, and cut stock, . . . . .	293.85	293.42	64.44	66.59
Boot and shoe findings, . . . . .	297.14	290.97	73.18	76.52
Stitching, heelings, etc., . . . . .	292.79	297.09	54.71	58.29
Boxes, barrels, kegs, etc., . . . . .	290.59	294.19	75.93	74.60
Boxes (paper), . . . . .	293.70	294.41	74.77	71.86
Brick, tiles, and sewer pipe, . . . . .	207.64	214.44	63.99	67.03
Brooms, brushes, and mops, . . . . .	295.88	300.20	63.52	63.67
Building materials, . . . . .	294.59	294.47	65.02	68.35
Burial cases, caskets, coffins, etc., . . . . .	298.96	306.41	71.00	74.80
Buttons and dress trimmings, . . . . .	292.15	297.52	63.29	61.86
Carpetings, . . . . .	300.35	302.29	83.10	88.00
Carriages and wagons, . . . . .	291.73	294.61	65.52	67.16
Cement, kaolin, lime, and plaster, . . . . .	266.25	279.06	69.70	72.50
Chemical preparations (compounded), . . . . .	299.99	303.74	64.14	61.07
Clocks and watches, . . . . .	290.22	291.01	77.50	79.75
Clothing, . . . . .	292.13	292.47	71.92	73.47
Cooking, lighting, and heating apparatus, . . . . .	277.73	284.74	77.20	79.20
Cordage and twine, . . . . .	299.58	300.59	75.46	74.63
Cotton goods, . . . . .	297.13	302.70	88.18	91.62
Cotton goods (woven), . . . . .	297.04	303.03	90.42	93.83
Cotton yarn and thread, . . . . .	297.48	300.38	80.14	85.61
Cotton waste, . . . . .	305.54	305.31	83.57	79.29
Crayons, pencils, crucibles, etc., . . . . .	298.63	296.41	75.00	72.00
Drugs and medicines, . . . . .	295.69	295.02	64.78	62.26
Dyestuffs, . . . . .	272.09	280.67	58.71	59.57
Earthen, plaster, and stone ware, . . . . .	292.48	295.14	77.82	73.18
Electrical apparatus and appliances, . . . . .	299.75	302.39	65.13	70.09
Electroplating, . . . . .	283.51	291.85	68.67	68.11
Emery and sand paper and cloth, etc., . . . . .	303.17	300.91	81.20	82.40

DAYS IN OPERATION AND PROPORTION OF BUSINESS DONE:  
BY INDUSTRIES — 1901, 1902 — Concluded.

INDUSTRIES.	AVERAGE NUMBER OF DAYS IN OPERATION		AVERAGE PROPOR- TION OF BUSINESS DONE	
	1901	1902	1901	1902
Fancy articles, etc., . . . . .	296.65	293.23	73.87	78.67
Fertilizers, . . . . .	306.00	304.31	70.33	67.50
Fine arts and taxidermy, . . . . .	306.00	306.00	74.00	76.67
Fireworks and matches, . . . . .	287.59	293.05	80.00	76.67
Flax, hemp, and jute goods, . . . . .	302.26	301.82	89.11	92.67
Food preparations, . . . . .	295.16	292.60	63.10	64.12
Furniture, . . . . .	296.13	297.28	68.27	69.87
Glass, . . . . .	274.45	288.81	62.15	68.62
Glue, isinglass, and starch, . . . . .	247.57	249.96	75.00	75.12
Hair work (animal and human), . . . . .	238.65	213.73	69.17	60.00
Hose and belting: rubber, linen, etc., . . . . .	295.04	284.54	69.67	72.17
Hosiery and knit goods, . . . . .	299.45	301.78	72.17	76.23
Ink, mucilage, and paste, . . . . .	292.77	294.85	54.43	55.00
Ivory, bone, shell, and horn goods, etc., . . . . .	287.87	293.95	73.08	77.96
Jewelry, . . . . .	286.52	286.90	67.00	68.54
Leather, . . . . .	301.30	292.79	70.13	65.52
Leather goods, . . . . .	299.45	298.86	66.61	69.75
Liquors (bottled) and carbonated beverages, . . . . .	294.07	293.93	60.07	53.44
Liquors (malt), . . . . .	304.11	300.66	60.86	59.21
Liquors (distilled), . . . . .	237.51	259.69	51.71	53.71
Lumber, . . . . .	283.33	266.86	66.46	68.33
Machines and machinery, . . . . .	297.51	297.85	69.64	72.52
Metals and metallic goods, . . . . .	296.79	296.94	68.40	70.66
Models, lasts, and patterns, . . . . .	293.43	291.82	59.92	60.96
Musical instruments and materials, . . . . .	295.49	301.09	69.94	74.39
Oils and illuminating fluids, . . . . .	304.73	304.87	67.44	68.56
Paints, colors, and crude chemicals, . . . . .	294.08	295.74	65.72	70.41
Paper, . . . . .	287.29	298.94	87.61	89.11
Paper goods, . . . . .	303.69	302.97	77.00	77.59
Perfumes, toilet articles, etc., . . . . .	299.66	287.70	28.33	27.67
Photographs and photographic materials, . . . . .	302.02	304.98	54.79	53.00
Polishes and dressing, . . . . .	303.37	298.44	51.91	53.85
Printing, publishing, and bookbinding, . . . . .	300.97	301.71	75.70	74.98
Print works, dye works, and bleacheries, . . . . .	290.56	296.71	68.89	72.36
Railroad construction and equipment, . . . . .	297.74	300.82	68.20	80.33
Rubber and elastic goods, . . . . .	268.85	284.91	66.52	72.60
Saddlery and harness, . . . . .	299.26	305.21	60.46	67.42
Scientific instruments and appliances, . . . . .	300.68	296.88	68.41	68.65
Shipbuilding, . . . . .	288.19	291.75	51.84	52.16
Silk and silk goods, . . . . .	284.77	297.84	65.46	73.62
Sporting and athletic goods, . . . . .	294.17	297.75	61.64	70.45
Stone, . . . . .	282.47	274.68	57.24	60.86
Quarried, . . . . .	276.92	264.92	50.77	54.42
Cut and monumental, . . . . .	288.04	284.57	59.20	62.81
Straw and palm leaf goods, . . . . .	259.38	266.12	68.15	72.35
Tallow, candles, soap, and grease, . . . . .	301.81	300.63	66.28	66.02
Tobacco, snuff, and cigars, . . . . .	292.56	293.94	62.09	63.08
Toys and games (children's), . . . . .	288.52	292.60	65.18	68.56
Trunks and valises, . . . . .	267.94	282.59	66.33	62.17
Whips, lashes, and stocks, . . . . .	294.68	300.86	76.07	86.64
Wooden goods, . . . . .	295.37	298.23	67.96	65.53
Woollen goods, . . . . .	293.51	290.70	84.52	88.98
Woven goods and yarn, . . . . .	293.70	299.87	86.39	90.77
Shoddy, waste, etc., . . . . .	288.41	294.66	76.86	81.62
Worsted goods, . . . . .	291.03	291.07	81.31	85.74
ALL INDUSTRIES, . . . . .	293.43	296.09	68.62	70.20

*Analysis.*

In the last two columns of the preceding table, the average proportion of business done is presented.

The industry showing the highest mark in 1902, *i.e.* the nearest approach to full capacity, was Cotton Goods (Woven), the proportion reaching 93.83 per cent, as against 90.42 per cent in 1901. The next highest is found in Flax, Hemp, and Jute Goods, where the proportion of full capacity reached 92.67 per cent in 1902 as against 89.11 in 1901.

Eight of the nine leading industries show greater proportion of business done in 1902 than in 1901, the proportions of a possible 100 for 1902 being as follows: Boots and Shoes, 67.06; Carpetings, 88; Cotton Goods, 91.62; Machines and Machinery, 72.52; Metals and Metallic Goods, 70.66; Paper, 89.11; Wool-len Goods, 88.98; and Worsted Goods, 85.74. For All Industries, 4,658 establishments being considered, the average proportion of business done was 70.20 in 1902 as against 68.62 in 1901.

The average number of days in operation, as shown in the first two columns of the preceding presentation, is based upon persons employed, the average number of persons employed in each establishment being multiplied by the number of days that particular establishment was operated, so that in the final averages given for each industry and for All Industries the elements of time and persons have been given their proper weight. In the following table, the figures for the nine leading industries, for other industries, and for All Industries are reproduced, with increase or decrease in days and percentages:

INDUSTRIES.	AVERAGE NUMBER OF DAYS IN OPERATION		INCREASE (+) OR DECREASE (—) IN 1902	
	1901	1902	Days	Percentages.
Boots and shoes (aggregate), . . .	292.39	291.70	—0.69	—0.24
Factory product, . . . . .	292.18	291.52	—0.66	—0.23
Soles, heels, and cut stock, . . .	293.85	293.42	—0.43	—0.15
Findings, . . . . .	297.14	290.97	—6.17	—2.08
Stitching, heeling, etc., . . . .	292.79	297.09	+4.30	+1.47
Carpetings, . . . . .	300.35	302.29	+1.94	+0.65
Cotton goods (aggregate), . . . .	297.13	302.70	+5.57	+1.87
Woven goods, . . . . .	297.04	303.03	+5.99	+2.02
Yarn and thread, . . . . .	297.48	300.38	+2.90	+0.97
Waste, . . . . .	305.54	305.31	—0.23	—0.08

INDUSTRIES.	AVERAGE NUMBER OF DAYS IN OPERATION		INCREASE (+) OR DECREASE (—) IN 1902	
	1901	1902	Days	Percentages
Leather, . . . . .	301.30	292.79	—8.51	—2.82
Machines and machinery, . . . . .	297.51	297.85	+0.34	+0.11
Metals and metallic goods, . . . . .	296.79	296.94	+0.15	+0.05
Paper, . . . . .	287.29	298.94	+11.65	+4.06
Woollen goods (aggregate), . . . . .	293.51	299.70	+6.19	+2.11
Woven goods and yarn, . . . . .	293.70	299.87	+6.17	+2.10
Shoddy, waste, etc., . . . . .	288.41	294.66	+6.25	+2.17
Worsted goods, . . . . .	291.03	291.07	+0.04	+0.01
Nine industries, . . . . .	295.15	297.76	+2.61	+0.88
Other industries, . . . . .	290.20	292.99	+2.79	+0.96
All industries, . . . . .	293.43	296.09	+2.66	+0.91

The total number of working days, exclusive of Sundays and holidays, was 306 in both years. The above table brings out the fact that in seven of the nine leading industries increases in running time in 1902 as compared with 1901 are shown; they are, Carpetings, Cotton Goods, Machines and Machinery, Metals and Metallic Goods, Paper, Woollen Goods, and Worsted Goods. The highest gains appear in the industries Paper and Woollen Goods, which show, respectively, increases of 11.65 and 6.19 days. Two of the nine leading industries show decreases in running time, they are, Boots and Shoes, 0.69 days, and Leather, 8.51 days.

For the industries other than the nine, the average number of days in operation was 292.99 in 1902 as against 290.20 in 1901, a gain of 2.79 days, or 0.96 per cent.

For All Industries, 4,658 establishments being considered, the average number of days in operation was 296.09 in 1902 as against 293.43 in 1901, an increase of 2.66 days, or 0.91 per cent.

The next table gives days in operation for establishments by periods of time.

CLASSIFICATION OF DAYS IN OPERATION.	NUMBER OF ESTABLISHMENTS		PERCENTAGES	
	1901	1902	1901	1902
Under 76 days, . . . . .	23	22	0.49	0.47
76 but under 152 days, . . . . .	85	86	1.83	1.85
152 but under 229 days, . . . . .	267	263	5.73	5.65

CLASSIFICATION OF DAYS IN OPERATION.	NUMBER OF ESTABLISHMENTS		PERCENTAGES	
	1901	1902	1901	1902
229 but under 256 days, . . . . .	230	220	4.94	4.72
256 but under 281 days, . . . . .	478	445	10.26	9.55
281 but under 306 days, . . . . .	1,750	1,779	37.57	38.19
306 days and over, . . . . .	1,825	1,843	39.18	39.57
TOTALS, . . . . .	4,658	4,658	100.00	100.00

Of the 4,658 establishments it will be noted that, in 1902, 1,843 ran the entire year, 306 days, as against 1,825 in 1901. In other words, 39.57 per cent of the entire number worked full time in 1902 as against 39.18 per cent in 1901. The number of establishments in the different periods does not vary materially in either year, however, the class under 76 days, or less than three months, containing 0.47 per cent of the establishments in 1902 and 0.49 per cent in 1901, while the increases or decreases shown for the other classes are not important.

If the last two classes in the table be considered, namely, those running 281 to 306 days and 306 days and over, more than three-fourths of the establishments, 3,622, or 77.76 per cent, would be included in 1902, and 3,575, or 76.75 per cent of the establishments in 1901.

The final table on this subject shows possible working time in connection with actual running time for the establishments considered in 1901 and 1902.

CLASSIFICATION OF YEARLY WORKING TIME.	Number of Establishments Considered	NUMBER OF DAYS	
		1901	1902
Possible working time, . . . . .	4,658	1,425,348	1,425,348
Actual running time, . . . . .	4,658	1,326,072	1,327,686
Lost time, . . . . .	4,658	99,276	97,662
Percentage of actual running time of possible working time, . . . . .	4,658	93.03	93.15

There were 306 working days in 1902. Therefore the possible working time for 4,658 establishments for that year would be 1,425,348 days. The actual running time, however, as reported for these 4,658 establishments was 1,327,686 days,



showing, in that year, a total loss of 97,662 days for the entire number of establishments. For 1901, the possible working time would be represented by the same figure, 1,425,348 days, while the actual running time for that year, as aggregated for the 4,658 establishments, was 1,326,072 days, or 99,276 days of lost time, the difference in lost time between the two years amounting to 1,614 days. That is to say, the amount of lost time for 1902 was 1,614 days less than in 1901, showing, as already noted in previous tables, that employment was more continuous and generally better in 1902 than in the earlier year. The percentage of actual running time of possible working time for 1901 was 93.03 per cent, and 93.15 per cent for 1902, leaving the percentages of lost time for the two years 6.97 and 6.85, respectively.

## General Summary of Industrial Conditions.

The leading facts for All Industries, drawn from the several presentations for 1901 and 1902, are reproduced in the following table :

CLASSIFICATION.	1901	1902	INCREASE (+) OR DECREASE (-) IN 1902	
			Amounts	Percent- ages
Number of establishments considered, .	4,658	4,658	-	-
Number of private firms, . . . .	3,217	3,139	-78	-2.42
Number of corporations, . . . .	1,282	1,347	+65	+5.07
Number of industrial combinations, .	17	19	+2	+11.76
Number of partners, . . . . .	5,020	4,846	-174	-3.47
Males, . . . . .	4,767	4,586	-181	-3.80
Females, . . . . .	160	164	+4	+2.50
Special and estates, . . . . .	93	96	+3	+3.23
Number of stockholders, . . . . .	50,807	55,649	+4,842	+9.53
Males, . . . . .	29,111	32,080	+2,969	+10.20
Females, . . . . .	16,423	18,013	+1,590	+9.68
Banks, trustees, etc, . . . . .	5,273	5,556	+283	+5.37
Average partners to a private firm, .	1.56	1.54	-0.02	-1.28
Average stockholders to a corporation, .	39.63	41.31	+1.68	+4.24
Capital devoted to production, . . .	\$473,577,629	\$492,355,468	+\$18,777,839	+3.97
Value of stock used, . . . . .	\$497,299,389	\$538,137,823	+\$40,838,434	+8.21
Value of goods made and work done, .	\$869,872,113	\$945,193,889	+\$75,321,776	+8.66
Persons employed :				
Average number, . . . . .	395,234	420,781	+25,547	+6.46
Males, . . . . .	266,553	283,525	+16,972	+6.37
Females, . . . . .	128,681	137,256	+8,575	+6.66
Smallest number, . . . . .	335,661	365,312	+29,651	+8.83
Greatest number, . . . . .	448,986	471,289	+22,303	+4.97
Excess of greatest over smallest, .	113,325	105,977	-7,348	-6.48
Total amount paid in wages, . . . .	\$177,734,299	\$193,552,175	+\$15,817,876	+8.90
Average yearly earnings (without re- gard to sex or age), . . . . .	\$449.69	\$459.98	+\$10.29	+2.29
Males,* . . . . .	\$542.23	\$552.66	+\$10.43	+1.92
Females,* . . . . .	\$342.68	\$353.36	+\$10.68	+3.12
Young persons,* . . . . .	\$231.85	\$244.24	+\$12.39	+5.34
Average proportion of business done, .	68.62	70.20	+1.58	+2.30
Average number of days in operation, .	293.43	296.09	+2.66	+0.91

\* Estimated.

The steady improvement for the year 1902 is clearly brought out by the percentages shown in the last column of the table. Decrease in private firms is coincident with increase in cor-

porations; that is to say, a decrease in the former would necessarily be accompanied by a corresponding increase in the latter since the number of establishments remains the same. Coincident also with the decrease in the number of partners, the increase in the number of stockholders will be noted.

The salient points brought out in the table are the increase shown for the amount of capital devoted to production of 3.97 per cent, the increase in value of stock consumed of 8.21 per cent, and the increase in value of goods made of 8.66 per cent. Increase also appears throughout for persons employed, namely, in aggregate average, in males, females, in smallest and greatest numbers, the percentages being in order as follows: 6.46, 6.37, 6.66, 8.83, and 4.97. The narrower range of unemployment in 1902 as compared with 1901, amounting to 7,348 persons, or 6.48 per cent, further indicates improved conditions. An increase is shown in the total amount paid in wages for All Industries of 8.90 per cent, and in the estimated average yearly earnings of 1.92 per cent for males, 3.12 per cent for females, and 5.34 per cent for young persons. The average proportion of business done shows an increase of 2.30 per cent, and the number of days in operation an increase of 0.91 per cent.

From the percentages in the table on pages 61 and 62, we have estimated the value of product turned out in the various industries for *all* the establishments of the State; that is to say, upon the per cent of increase or decrease shown for the 4,658 typical establishments, the increases or decreases in the aggregate value of product for the different industries and for all the industries of the State have been approximated.

*Estimated Value of Goods Made and Work Done — 1902.*

INDUSTRIES.	VALUE OF GOODS MADE AND WORK DONE
Agricultural implements, . . . . .	\$1,584,830 .
Arms and ammunition, . . . . .	4,044,509
Artisans' tools, . . . . .	4,605,987
Awnings, sails, tents, etc., . . . . .	771,020
Bicycles, tricycles, etc., . . . . .	1,908,886
Boots and shoes, . . . . .	168,425,921
Boxes, barrels, kegs, etc., . . . . .	6,708,808

*Estimated Value of Goods Made and Work Done — 1902 — Continued.*

INDUSTRIES.	VALUE OF GOODS MADE AND WORK DONE
Boxes (paper), . . . . .	\$3,053,210
Brick, tiles, and sewer pipe, . . . . .	1,747,363
Brooms, brushes, and mops, . . . . .	2,302,878
Building, . . . . .	81,009,142
Building materials, . . . . .	2,872,186
Burial cases, caskets, coffins, etc., . . . . .	759,311
Buttons and dress trimmings, . . . . .	1,090,717
Carpetings, . . . . .	10,570,642
Carriages and wagons, . . . . .	8,915,050
Cement, kaolin, lime, and plaster, . . . . .	571,138
Chemical preparations (compounded), . . . . .	2,368,116
Clocks and watches, . . . . .	3,058,275
Clothing, . . . . .	51,432,603
Cooking, lighting, and heating apparatus, . . . . .	4,834,038
Cordage and twine, . . . . .	12,565,869
Cotton goods, . . . . .	130,996,900
Crayons, pencils, crucibles, etc., . . . . .	166,973
Drugs and medicines, . . . . .	6,320,143
Dyestuffs, . . . . .	654,955
Earthen, plaster, and stone ware, . . . . .	541,567
Electrical apparatus and appliances, . . . . .	13,795,712
Electroplating, . . . . .	287,739
Emery and sand paper and cloth, etc., . . . . .	1,362,085
Fancy articles, etc., . . . . .	1,115,247
Fertilizers, . . . . .	2,577,764
Fine arts and taxidermy, . . . . .	74,440
Fireworks and matches, . . . . .	125,326
Flax, hemp, and jute goods, . . . . .	5,751,367
Food preparations, . . . . .	107,407,891
Furniture, . . . . .	20,869,415
Gas and residual products, . . . . .	8,643,360
Glass, . . . . .	442,016
Glue, isinglass, and starch, . . . . .	1,689,448
Hair work (animal and human), . . . . .	343,672
Hose and belting: rubber, linen, etc., . . . . .	633,813
Hosiery and knit goods, . . . . .	7,940,833
Ink, mucilage, and paste, . . . . .	626,144
Ivory, bone, shell, and horn goods, etc., . . . . .	2,948,195
Jewelry, . . . . .	11,147,781
Leather, . . . . .	25,214,190
Leather goods, . . . . .	4,048,261
Liquors (bottled) and carbonated beverages, . . . . .	2,514,902
Liquors (malt), . . . . .	10,451,829
Liquors (distilled), . . . . .	2,928,645
Lumber, . . . . .	5,564,343

*Estimated Value of Goods Made and Work Done — 1902 — Concluded.*

INDUSTRIES.	VALUE OF GOODS MADE AND WORK DONE
Machines and machinery, . . . . .	\$62,547,467
Metals and metallic goods, . . . . .	60,024,035
Models, lasts, and patterns, . . . . .	1,386,569
Musical instruments and materials, . . . . .	8,686,935
Oils and illuminating fluids, . . . . .	2,540,514
Paints, colors, and crude chemicals, . . . . .	1,898,824
Paper, . . . . .	27,695,846
Paper goods, . . . . .	9,734,224
Perfumes, toilet articles, etc., . . . . .	289,148
Photographs and photographic materials, . . . . .	2,336,604
Polishes and dressing, . . . . .	2,716,846
Printing, publishing, and bookbinding, . . . . .	29,091,958
Print works, dye works, and bleacheries, . . . . .	32,759,058
Railroad construction and equipment, . . . . .	5,230,933
Rubber and elastic goods, . . . . .	36,230,068
Saddlery and harness, . . . . .	1,776,090
Scientific instruments and appliances, . . . . .	2,951,283
Shipbuilding, . . . . .	3,344,953
Silk and silk goods, . . . . .	5,824,678
Sporting and athletic goods, . . . . .	1,020,291
Stone, . . . . .	6,267,431
Straw and palm leaf goods, . . . . .	5,977,968
Tallow, candles, soap, and grease, . . . . .	5,578,613
Tobacco, snuff, and cigars, . . . . .	5,793,687
Toys and games (children's), . . . . .	861,723
Trunks and valises, . . . . .	200,836
Whips, lashes, and stocks, . . . . .	1,864,249
Wooden goods, . . . . .	3,530,055
Woollen goods, . . . . .	50,117,185
Worsted goods, . . . . .	49,594,907
ALL INDUSTRIES, . . . . .	\$1,187,608,574

The final line of the table brings out the fact that had a complete census of manufactures for the State been taken on December 31, 1902, the entire volume of product turned out for the year would have approximated \$1,187,608,574, and the value of goods produced by the individual industries would be, substantially, as given above.

The next table brings forward from preceding presentations the value of goods made, the value of stock and materials used, and the total amount paid in wages together with the industry

product and the profit and minor expense fund for the nine leading industries.

INDUSTRIES.	Value of Goods Made	Value of Stock Used	Industry Product	Paid In Wages	Profit and Minor Expense Fund
Boots and shoes, . . . .	\$143,556,265	\$90,380,233	\$53,176,032	\$30,090,845	\$23,085,187
Carpetings, . . . . .	10,573,836	6,525,398	4,048,438	2,238,944	1,809,494
Cotton goods, . . . . .	129,544,308	72,623,827	56,920,481	35,853,378	21,067,103
Leather, . . . . .	23,558,991	18,005,012	5,553,979	2,987,527	2,566,452
Machines and machinery, .	52,820,803	19,709,898	33,110,905	18,452,960	16,657,945
Metals and metallic goods, .	49,419,924	26,221,911	23,198,013	12,808,669	10,389,344
Paper, . . . . .	28,228,294	15,802,400	12,425,894	4,775,405	7,650,489
Woollen goods, . . . . .	49,792,584	28,263,950	21,528,634	10,200,089	11,328,545
Worsted goods, . . . . .	47,909,654	28,069,781	19,839,873	7,576,602	12,263,271

The terms "industry product" and "profit and minor expense fund" being explained, the meaning of the figures becomes apparent. By industry product is meant the actual result of the productive forces of the industry, that is, the added value created above the value of stock and materials consumed. This value is obtained by deducting from the total value of goods made the cost value of stock used, the difference being the added value or actual product due to the industry. In the division of the proceeds of each industry, one part of the industry product is paid to the labor force in the form of wages, this being labor's share of the product. The balance constitutes a fund from which are paid freights, insurance, interest on loans (credit capital), interest on stock (fixed or invested capital), rents, taxes, commissions, salaries, etc., in fact, all expenses other than those for stock and wages. The remainder, if any, is the profit of the employer. The entire balance of the industry product remaining after the deduction of the amount paid in wages, becomes a profit and minor expense fund, and is thus designated in the table. Of course, it will be understood that the term "minor expense" is relative. The expenses, some of which we have enumerated, paid out of this balance, are in themselves considerable in amount, and are only to be classed as "minor" in comparison with the generally larger amounts expended for stock and materials and wages.

The table which follows presents the industry product per

\$1,000 of capital devoted to production, the average product per employé, the percentage of industry product paid in wages, and the percentage devoted to other expenses for the nine leading industries for 1902 :

INDUSTRIES.	Capital Devoted to Production	Average Persons Employed	INDUSTRY PRODUCT		PERCENTAGES OF INDUSTRY PRODUCT	
			Per \$1,000 of Capital	Average per Employé	Devoted to Profit and Minor Expenses	Paid in Wages
Boots and shoes, . . .	\$28,150,214	61,224	\$1,889.01	\$868.55	43.41	56.59
Carpetings, . . . . .	6,471,782	5,206	625.55	777.65	44.70	55.30
Cotton goods, . . . .	127,877,930	93,802	445.12	606.82	37.01	62.99
Leather, . . . . .	8,629,068	6,367	643.64	872.31	46.21	53.79
Machines and machinery, .	41,521,821	29,528	797.43	1,121.34	50.31	49.69
Metals and metallic goods, .	27,551,283	23,052	841.99	1,006.33	44.79	55.21
Paper, . . . . .	21,747,744	10,391	571.36	1,195.83	61.57	38.43
Woollen goods, . . . .	27,817,893	24,519	773.91	878.04	52.62	47.38
Worsted goods, . . . .	18,026,729	19,048	1,100.58	1,041.57	61.81	38.19

Boots and shoes shows the highest industry product per \$1,000 of capital invested, namely, \$1,889.01. Next to this comes Worsted Goods with an industry product per \$1,000 of capital of \$1,100.58. Following in the order named are Metals and Metallic Goods, \$841.99; Machines and Machinery, \$797.43; Woollen Goods, \$773.91; Leather, \$643.64; Carpetings, \$625.55; Paper, \$571.36; and Cotton Goods, \$445.12.

As regards the efficiency of labor, the figures in the fourth column of the table have been computed. The highest industry product per employé is shown for the paper industry, namely, \$1,195.83. It is closely followed by Machines and Machinery which shows an average industry product per employé of \$1,121.34; by Worsted Goods, in which an industry product per employé of \$1,041.57 appears, and by Metals and Metallic Goods, \$1,006.33. In five industries, the average industry product per employé falls below \$1,000, namely, Woollen Goods, \$878.04; Leather, \$872.31; Boots and Shoes, \$868.55; Carpetings, \$777.65, and Cotton Goods, again lowest in the list, \$606.82.

For proportion of industry product paid in wages, however, as shown by the last column of the table, Cotton Goods leads, the percentage being 62.99. Following in the order named are Boots and Shoes with a percentage of industry product

paid in wages of 56.59; Carpetings, 55.30; Metals and Metallic Goods, 55.21; Leather, 53.79; Machines and Machinery 49.69; Woollen Goods, 47.38; Paper, 38.43; and Worsted Goods, 38.19. The percentages devoted to profit and minor expenses which are the complements of the percentages paid in wages appear in the table in the fifth column.

The following table shows the rank of the industries as regards the amount of industry product per \$1,000 of capital devoted to production as compared with their rank for 1901 shown in the report on Annual Statistics of Manufactures for that year:

1901.	1902.
Boots and Shoes.	Boots and Shoes.
Worsted Goods.	Worsted Goods.
Metals and Metallic Goods.	Metals and Metallic Goods.
Leather.	Machines and Machinery.
Machines and Machinery.	Woollen Goods.
Woollen Goods.	Leather.
Carpetings.	Carpetings.
Paper.	Paper.
Cotton Goods.	Cotton Goods.

Six of the nine industries held the same rank in both years. Machines and Machinery and Woollen Goods, which held, respectively, fifth and sixth places in 1901, rose to fourth and fifth places, respectively, in 1902, and Leather dropped from fourth place in 1901 to sixth place in 1902.

With respect to the average industry product per employé, the rank of the industries in each of the years appears as follows:

1901.	1902.
Paper.	Paper.
Machines and Machinery.	Machines and Machinery.
Leather.	Worsted Goods.
Metals and Metallic Goods.	Metals and Metallic Goods.
Worsted Goods.	Woollen Goods.
Boots and Shoes.	Leather.
Woollen Goods.	Boots and Shoes.
Carpetings.	Carpetings.
Cotton Goods.	Cotton Goods.

In this comparison, five of the industries held the same rank in 1902 as in 1901. Of the others, Leather fell from third place in 1901 to sixth place in 1902, Boots and Shoes fell from sixth to seventh place, while Worsted Goods rose from fifth to



third place and Woollen Goods advanced from seventh place to that of fifth.

With respect to the percentages of industry product paid in wages, the rank of the different industries was as follows :

1901.	1902.
Cotton Goods.	Cotton Goods.
Boots and Shoes.	Boots and Shoes.
Metals and Metallic Goods.	Carpetings.
Carpetings.	Metals and Metallic Goods.
Machines and Machinery.	Leather.
Woollen Goods.	Machines and Machinery.
Leather.	Woollen Goods.
Worsted Goods.	Paper.
Paper.	Worsted Goods.

Only two of the industries retained the same rank, namely, Cotton Goods and Boots and Shoes holding, respectively, first and second place in both years. Carpetings and Metals and Metallic Goods changed places with each other, as did also Paper and Worsted Goods. Machines and Machinery fell from fifth to sixth place and Woollen Goods from sixth to seventh, while Leather rose from seventh place in 1901 to fifth place in 1902.

In the tables which follow, we present the percentage of industry product paid in wages and the percentage devoted to profit and minor expenses in connection with the value of goods made, the cost of stock and materials used, and the amount of capital devoted to production for 1902. The first of the series relates to Boots and Shoes.

*Boots and Shoes.* [Comparison for 661 Establishments.]

CLASSIFICATION.	1901	1902
Amount of capital devoted to production, . . . . .	\$26,406,295	\$28,150,214
Value of goods made and work done (gross product), . . . .	\$138,010,800	\$143,556,265
Value of stock used and other materials consumed in production, .	\$87,689,796	\$90,380,233
Industry product (gross product less value of stock and materials),	\$50,321,004	\$53,176,032
Wages (labor's direct share of product), . . . . .	\$29,008,218	\$30,090,845
Profit and minor expense fund (industry product less wages), .	\$21,312,786	\$23,085,187
Percentage of industry product paid in wages, . . . . .	57.65	56.59
Percentage of industry product devoted to profit and minor expenses,	42.35	43.41
Percentage of profit and minor expense fund of capital devoted to production, . . . . .	80.71	82.01

The percentage of industry product paid in wages fell from 57.65 per cent in 1901 to 56.59 per cent in 1902, and the percentage devoted to profit and minor expenses, which is the complement of the percentage paid in wages, rose from 42.35 in 1901 to 43.41 in 1902. The percentage of profit and minor expense fund of capital devoted to production was 80.71 in 1901 as against 82.01 in 1902.

The next table relates to Carpetings. .

*Carpetings.* [Comparison for 10 Establishments.]

CLASSIFICATION.	1901	1902
Amount of capital devoted to production, . . . . .	\$5,958,557	\$6,471,782
Value of goods made and work done (gross product), . . . .	\$8,214,183	\$10,573,836
Value of stock used and other materials consumed in production, .	\$4,703,264	\$6,525,398
Industry product (gross product less value of stock and materials),	\$3,510,919	\$4,048,438
Wages (labor's direct share of product), . . . . .	\$1,803,952	\$2,238,944
Profit and minor expense fund (industry product less wages), . .	\$1,706,967	\$1,809,494
Percentage of industry product paid in wages, . . . . .	51.38	55.30
Percentage of industry product devoted to profit and minor expenses,	48.62	44.70
Percentage of profit and minor expense fund of capital devoted to production, . . . . .	28.65	27.96

In this industry, the percentage of industry product paid in wages was considerably higher in 1902 than in the previous year, being 55.30 as against 51.38 in 1901. A somewhat smaller percentage, therefore, was left for the payment of profit and minor expenses, 44.70 in 1902 as against 48.62 in the previous year, while the percentage which the profit and minor expense fund formed of capital devoted to production was 28.65 in 1901 as against 27.96 in 1902.

The facts for Cotton Goods follow :

*Cotton Goods.* [Comparison for 158 Establishments.]

CLASSIFICATION.	1901	1902
Amount of capital devoted to production, . . . . .	\$125,988,505	\$127,877,930
Value of goods made and work done (gross product), . . . .	\$117,015,196	\$129,544,308
Value of stock used and other materials consumed in production, .	\$69,307,173	\$72,623,827
Industry product (gross product less value of stock and materials),	\$47,708,023	\$56,920,481
Wages (labor's direct share of product), . . . . .	\$32,685,625	\$35,853,378

*Cotton Goods.* [Comparison for 158 Establishments] — Concluded.

CLASSIFICATION.	1901	1902
Profit and minor expense fund (industry product less wages), . . . . .	\$15,022,398	\$21,067,103
Percentage of industry product paid in wages, . . . . .	68.51	62.99
Percentage of industry product devoted to profit and minor expenses, . . . . .	31.49	37.01
Percentage of profit and minor expense fund of capital devoted to production, . . . . .	11.92	16.47

In Cotton Goods, the percentage of industry product paid in wages fell from 68.51 in 1901 to 62.99 in 1902, leaving a somewhat larger amount for the payment of profit and minor expenses, the percentages being 37.01 in 1902 as compared with 31.49 in 1901, and the percentage which this amount formed of capital devoted to production shows increase also, namely, 16.47 in 1902 as against 11.92 in 1901.

A comparison for Leather follows :

*Leather.* [Comparison for 94 Establishments.]

CLASSIFICATION.	1901	1902
Amount of capital devoted to production, . . . . .	\$8,526,364	\$8,629,068
Value of goods made and work done (gross product), . . . . .	\$25,410,837	\$23,558,991
Value of stock used and other materials consumed in production, . . . . .	\$18,541,218	\$18,005,012
Industry product (gross product less value of stock and materials), . . . . .	\$6,869,619	\$5,553,979
Wages (labor's direct share of product), . . . . .	\$3,141,710	\$2,987,527
Profit and minor expense fund (industry product less wages), . . . . .	\$3,727,909	\$2,566,452
Percentage of industry product paid in wages, . . . . .	45.73	53.79
Percentage of industry product devoted to profit and minor expenses, . . . . .	54.27	46.21
Percentage of profit and minor expense fund of capital devoted to production, . . . . .	43.72	29.74

Although the leather industry shows decreases upon nearly all points for 1902 as compared with 1901, nevertheless the percentage of industry product paid in wages for 1902 was 53.79 as compared with 45.73 for 1901. This leaves a considerably smaller fund devoted to profit and minor expenses, namely, 46.21 per cent in 1902 as against 54.27 in 1901. The percentage which the profit and minor expense fund formed of capital devoted to production was only 29.74 in 1902 as against 43.72 in 1901.

A comparison for Machines and Machinery follows :

*Machines and Machinery.* [Comparison for 360 Establishments.]

CLASSIFICATION.	1901	1902
Amount of capital devoted to production, . . . . .	\$39,990,855	\$41,521,821
Value of goods made and work done (gross product), . . . .	\$49,359,957	\$52,820,803
Value of stock used and other materials consumed in production, .	\$17,804,567	\$19,709,898
Industry product (gross product less value of stock and materials),	\$31,555,390	\$33,110,905
Wages (labor's direct share of product), . . . . .	\$15,063,944	\$16,452,960
Profit and minor expense fund (industry product less wages), . .	\$16,491,446	\$16,657,945
Percentage of industry product paid in wages, . . . . .	47.74	49.69
Percentage of industry product devoted to profit and minor expenses,	52.26	50.31
Percentage of profit and minor expense fund of capital devoted to production, . . . . .	41.24	40.12

For Machines and Machinery, no great variation in percentages appears, the amount paid in wages for 1902 forming 49.69 per cent of the industry product as against 47.74 per cent in the preceding year. The proportion devoted to profit and minor expenses slightly declined, being 50.31 in 1902 and 52.26 in the earlier year. The percentages which the profit and minor expense fund formed of capital invested were 41.24 and 40.12 in 1901 and 1902, respectively.

The next table relates to Metals and Metallic Goods.

*Metals and Metallic Goods.* [Comparison for 377 Establishments.]

CLASSIFICATION.	1901	1902
Amount of capital devoted to production, . . . . .	\$27,022,491	\$27,551,283
Value of goods made and work done (gross product), . . . .	\$47,394,460	\$49,419,924
Value of stock used and other materials consumed in production, .	\$25,454,330	\$26,221,911
Industry product (gross product less value of stock and materials),	\$21,940,130	\$23,198,013
Wages (labor's direct share of product), . . . . .	\$12,493,553	\$12,808,669
Profit and minor expense fund (industry product less wages), . .	\$9,446,577	\$10,389,344
Percentage of industry product paid in wages, . . . . .	56.94	55.21
Percentage of industry product devoted to profit and minor expenses,	43.06	44.79
Percentage of profit and minor expense fund of capital devoted to production, . . . . .	34.96	37.71

As in Machines and Machinery, the percentages in this table show no material variation in 1902 as compared with 1901, the percentages of industry product paid in wages being 55.21 and 56.94, respectively, leaving practically the same amount in both years, namely, 44.79 per cent and 43.06 per cent, to be

devoted to profit and minor expenses. The percentage which the profit and minor expense fund formed of capital devoted to production was 37.71 in 1902 and 34.96 in 1901.

The next table exhibits the facts for Paper.

*Paper.* [Comparison for 75 Establishments.]

CLASSIFICATION.	1901	1902
Amount of capital devoted to production, . . . . .	\$20,708,652	\$21,747,744
Value of goods made and work done (gross product), . . . .	\$25,048,945	\$28,228,294
Value of stock used and other materials consumed in production, .	\$14,080,401	\$15,802,400
Industry product (gross product less value of stock and materials),	\$10,968,544	\$12,425,894
Wages (labor's direct share of product), . . . . .	\$4,202,607	\$4,775,405
Profit and minor expense fund (industry product less wages), .	\$6,765,937	\$7,650,489
Percentage of industry product paid in wages, . . . . .	38.32	38.43
Percentage of industry product devoted to profit and minor expenses,	61.68	61.57
Percentage of profit and minor expense fund of capital devoted to production, . . . . .	32.67	35.18

The conditions in this industry were more nearly identical than in any yet analyzed, the percentages of industry product paid in wages being 38.43 for 1902 and 38.32 for 1901. The complementary percentage for the fund devoted to profit and minor expenses was necessarily very close, namely, 61.57 in 1902 and 61.68 for 1901. The percentage which the profit and minor expense fund formed of capital devoted to production was slightly greater in 1902, 35.18 as against 32.67 in the former year.

The next table relates to Woollen Goods.

*Woollen Goods.* [Comparison for 149 Establishments.]

CLASSIFICATION.	1901	1902
Amount of capital devoted to production, . . . . .	\$25,986,880	\$27,817,893
Value of goods made and work done (gross product), . . . .	\$42,317,936	\$49,792,584
Value of stock used and other materials consumed in production, .	\$24,099,153	\$28,263,950
Industry product (gross product less value of stock and materials),	\$18,218,783	\$21,528,634
Wages (labor's direct share of product), . . . . .	\$8,857,867	\$10,200,089
Profit and minor expense fund (industry product less wages), .	\$9,360,916	\$11,328,545
Percentage of industry product paid in wages, . . . . .	48.62	47.38
Percentage of industry product devoted to profit and minor expenses,	51.38	52.62
Percentage of profit and minor expense fund of capital devoted to production, . . . . .	36.02	40.72

Although the total amount disbursed in wages in this industry shows a marked increase, yet the percentage of industry product paid in wages shows a slight decline in 1902 as compared with the earlier year, the figures being 47.38 as against 48.62. The percentage of industry product devoted to profit and minor expenses shows a correspondingly slight increase, or 52.62 per cent for 1902 as against 51.38 per cent for 1901, and the percentage of profit and minor expense fund of capital devoted to production shows a somewhat larger increase, namely, 40.72 in 1902 as against 36.02 in the previous year.

The final table is for Worsteds Goods.

*Worsted Goods.* [Comparison for 39 Establishments.]

CLASSIFICATION.	1901	1902
Amount of capital devoted to production, . . . . .	\$16,080,809	\$18,026,729
Value of goods made and work done (gross product), . . . .	\$40,213,217	\$47,909,654
Value of stock used and other materials consumed in production, .	\$25,093,563	\$28,069,781
Industry product (gross product less value of stock and materials),	\$15,119,654	\$19,839,873
Wages (labor's direct share of product), . . . . .	\$6,433,538	\$7,576,602
Profit and minor expense fund (industry product less wages), .	\$8,686,116	\$12,263,271
Percentage of industry product paid in wages, . . . . .	42.55	38.19
Percentage of industry product devoted to profit and minor expenses,	57.45	61.81
Percentage of profit and minor expense fund of capital devoted to production, . . . . .	54.02	68.03

In this industry, we have a slightly smaller share devoted to wages, the percentage of industry product paid in wages being 38.19 in 1902 as compared with 42.55 in 1901, while the percentage of industry product devoted to profit and minor expenses rose from 57.45 to 61.81. The profit and minor expense fund formed a larger percentage of the capital devoted to production, namely, 68.03 in 1902 as against 54.02 in 1901.

#### *Condensed Statements.*

The data contained in this volume warrant the following condensed statements concerning the years 1901 and 1902 for the 4,658 establishments in 80 classified industries:

## CAPITAL DEVOTED TO PRODUCTION.

*The increase in capital devoted to production in All Industries for 1902 as compared with 1901 amounted to 3.97 per cent. For the nine leading industries percentages of increase appear as follows: Boots and Shoes, 6.60; Carpetings, 8.61; Cotton Goods, 1.50; Leather, 1.20; Machines and Machinery, 3.83; Metals and Metallic Goods, 1.96; Paper, 5.02; Woollen Goods, 7.05; and Worsted Goods, 12.10. The value of capital devoted to production in these nine industries represents 62.51 per cent of the entire capital devoted to production for All Industries in 1902.*

## STOCK AND MATERIALS USED.

*The increase in stock and materials used in 1902 for All Industries was 8.21 per cent. In the nine leading industries, the stock used in which represents 56.79 per cent of the entire amount of stock used in All Industries, increases appear as follows: Boots and Shoes, 3.07; Carpetings, 38.74; Cotton Goods, 4.79; Machines and Machinery, 10.70; Metals and Metallic Goods, 3.02; Paper, 12.23; Woollen Goods, 17.28; and Worsted Goods, 11.86. The only industry showing decrease in value of stock used is Leather, the decline being 2.89 per cent.*

## GOODS MADE AND WORK DONE.

*The value of product for All Industries for 1902 shows an increase of 8.66 per cent. The nine leading industries, the value of goods made in which comprises 56.64 per cent of the entire product for All Industries in 1902, show increases as follows: Boots and Shoes, 4.02; Carpetings, 28.73; Cotton Goods, 10.71; Machines and Machinery, 7.01; Metals and Metallic Goods, 4.27; Paper, 12.69; Woollen Goods, 17.66; and Worsted Goods, 19.14. Leather shows a decline of 7.29 per cent.*

*Of the \$945,193,889 representing the entire product of the 4,658 establishments in 1902, \$261,068,196, or 27.62 per cent, was turned out by private firms; \$594,112,374, or 62.86 per cent, by establishments under the management of corporations; and \$90,013,319, or 9.52 per cent, by establishments controlled by industrial combinations.*

*From the percentages of increase or decrease shown by these typical establishments in the various industries, the value of product for the State, assuming a complete census to have been taken December 31, 1902, is estimated as \$1,187,608,574.*

#### PERSONS EMPLOYED.

*The increase in average number of persons employed in the year 1902 as compared with 1901 was 25,547, or 6.46 per cent. The greatest number of persons employed shows an increase of 4.97 per cent, and the smallest number of persons employed an increase of 8.83 per cent, while the range of employment, that is, the difference between the smallest and greatest number of persons employed, was narrower in 1902 than in 1901 by 7,348 persons, or 6.48 per cent. In the nine leading industries the increases in average persons employed are as follows: Boots and Shoes, 2.41 per cent; Carpetings, 13.72 per cent; Cotton Goods, 4.32 per cent; Machines and Machinery, 7.83 per cent; Metals and Metallic Goods, 3.60 per cent; Paper, 8.34 per cent; Woollen Goods, 11.72 per cent; and Worsted Goods, 15.43 per cent. Leather shows a decrease of 2.30 per cent.*

#### WAGES PAID.

*The increase in the total amount of wages paid in 1902 as compared with 1901 was \$15,817,876, or 8.90 per cent. For eight of the nine leading industries, percentages of increase appear as follows: Boots and Shoes, 3.73; Carpetings, 24.11; Cotton Goods, 9.69; Machines and Machinery, 9.22; Metals and Metallic Goods, 2.52; Paper, 13.63; Woollen Goods, 15.15; and Worsted Goods, 17.77. Leather shows a decrease of 4.91 per cent.*

#### AVERAGE YEARLY EARNINGS.

*The average yearly earnings per individual, without regard to sex or age, was \$449.69 in 1901 and \$459.98 in 1902, an increase in the latter year of 2.29 per cent. The range from highest to lowest in 1902 was from \$862.05 in Liquors (Malt) to \$327.50 in Brooms, Brushes, and Mops. Increases among the nine leading industries are shown as follows: Boots*



*and Shoes, 1.29 per cent; Carpetings, 9.14 per cent; Cotton Goods, 5.14 per cent; Machines and Machinery, 1.29 per cent; Paper, 4.88 per cent; Woollen Goods, 3.07 per cent; and Worsted Goods, 2.03 per cent. The decrease shown for the leather industry amounted to 2.67 per cent and for Metals and Metallic Goods to 1.04 per cent. The higher earnings rule in the industries employing males chiefly, and the lower in factory industries employing a large proportion of females and young persons.*

#### WORKING TIME AND PROPORTION OF BUSINESS DONE.

*Each of the employes worked on an average 293.43 days in 1901 and 296.09 days in 1902, an increase of 2.66 days or 0.91 per cent. The average proportion of business done by each establishment reached 68.62 per cent of the total capacity in 1901 as against 70.20 per cent for 1902, an increase in the latter year of 2.30 per cent.*



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